# The Iron A

## A Review of the Hardware, Iron and Metal Trades.

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#### Duryee's Petroleum Furnace.

Iron making with petroleum has lately attracted considerable attention, and we have, in a recent issue, given a brief account of the process as conducted by the Pough-keepsie Iron and Steel Company, New York. We illustrate this week Mr. Duryee's petroleum furnace, from the engravings of which it will be seen that the petroleum is blown into the furnace, in the form of spray, blow into the furnace, in the form of spray, by a current of air. It is ignited by the fire in the furnace 5, and the intense heat which results is utilized in reducing the ores. The weight of the furnace here shown is about 100 tons, its length being 120 feet and its

friction rollers, 20; the upper or reducing chamber of the cupola is supported in a similar manner. The fuel furnace 5 is supported by rails, 32, resting on columns some 7 feet above the ground. The manner of operating is as follows: A coal fire started on the grate in the fuel furnace 5, is continued until the furnace is white hot; coal dust is then introduced freely through 7, while petroleum is allowed to enter through the pipe 17. The valves 25, 26 and 27 are next opened, and a compound oxyhydrogen blow-pipe flame, from 20 to 40 feet long, enters the cupola through the nozzle 4. The flame is deflected upward by the bridge 4, thus protecting the blooms from the action of the oxidizing flame.

The iron was found to bend readily when cold, and exhibited a steely fracture. This effectual and simple method of eliminating the phosphorus is deserving of special praise, several subsequent tests giving similar results. Several tons of the following mixture were on one occasion introduced into the furnace, and the resulting blooms rolled into bar iron at the Wyandotte Rolling Mill:

Rolling Mill:

The iron was found to bend readily when cold, and exhibited a steely fracture. This effectual and simple method of eliminating the phosphorus is deserving of special praise, several subsequent tests giving similar results. Several tons of the following mixture were on one occasion introduced into the furnace, and the resulting allowed to enter through the pipe 17. The valves 25, 26 and 27 are next opened, and a can be so entirely kept under control that the present vils and expenses attached to blooming out blast furnaces are quite done to the sing and expenses attached to blooming out blast furnaces are quite done that the present vils and expenses attached to blooming out blast furnaces. The process in the reducing chamber is such that there is no possibility of a loss. The beat when required is so quickly produced to blooming out blast furnace as a quickly produced to blooming out blast furnace as a quickly produced to b too tons, its length being 120 feet and its inclination 5 feet. It is capable of reducing about 4 tons of ore per hour. In our engravings, A is a longitudinal section; B is a section along the line A'B', showing the furnace door and the nozzle through which the air blast is forced (see Fig. 3, page 3); and C is a top view. The revolving cupola is designated by number 1. while 2 and 3 representations from the action of the exidizing flame. The introduced through the funnel 23, should be nixed with a proper proportion of burned lime, or preferably 2 per cent. Selongation in the tests made with the ingressity of burned lime, or preferably 2 per cent. Selongation in the furnace is the secret of its success in reducing ores, and since the intense heat produces a Reduction of area of bar.

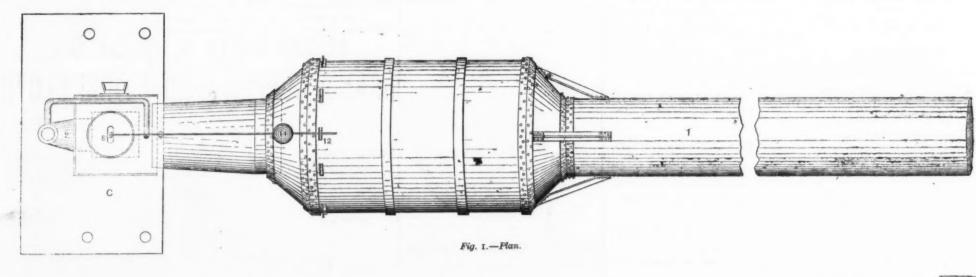
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Lake Superior specular	20
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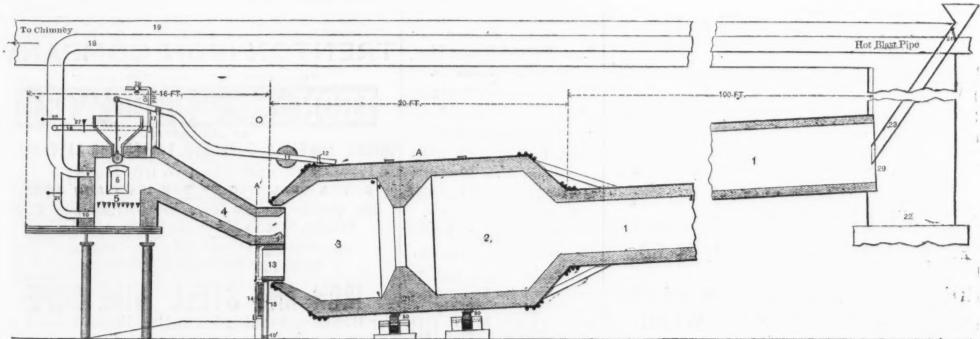
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Working drawings of the furnace may be seen at Mr. Duryee's office, 176 Broadway,

Reru and Chili.

The published correspondence between the Department of the Secretary of State at Washington and the American Minister to Secretary of State at State State at Washington and the American Minister to Secretary of State at State Sta





DURYEE'S PETROLEUM FURNACE

sent the puddling hearths, which are 10 few wids and about \$ feet long. The air romarkably clean and free from cinder, respect to the petroleum, passes through the furnace 5; and is led by the petroleum, passes through the furnace 5; and is led by the petroleum, passes through the furnace 5; and is led by the petroleum, passes through the furnace 5; and is led by the purple with common salty through the furnace 5; and is led by the purple with common salty through the furnace is supplied with color do dust for read of a wise diplomery, to successfully removing the phosphorus in one instance, the estimated heat required part of the fact that chloride of phosphorus is volatile at about 300 °F, or a to prevent of the furnace is supplied with color of the common salty through the revolving cupola that, for each revolution, the valve 8 is opened, among the color of the 

Ore.																								F	4	ır	cent
Metallic																											
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Moisture.														0			0	0			0						3.7
Workel.																											

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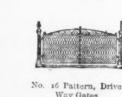
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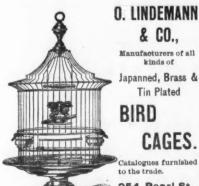
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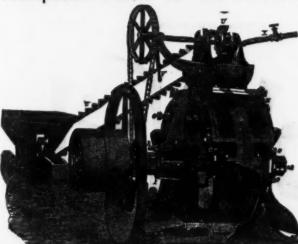
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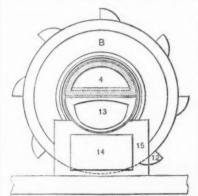
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Blast Furnace Slag and its Uses.

Mr. Charles Wood, of the Tees Iron Works, Middlesboro', England, lately read a paper before the Cleveland Iron Trade Foremen's Association, on the uses of blast-furnace slag as applied to the manufacture of bricks, cement, mortar, &c. Mr. Wood, after referring to the enormous quantities of slag annually produced, and after passing in review other slags produced in many metal-lurgical operations, described the nature of blast-furnace slag, and detailed the uses for which it has been, and is still, largely employed. It was used for road making for a number of years, and, lately, the construction of breakwaters has exhausted large quantities. In the manufacture of slag castquantities. In the manufacture of slag castings there has been one successful exception to the numerous failures, and by a compound process it may be converted into glass for bottle making. A chemical analysis of the chief slags produced in Great Britain was given, the analysis showing that the three most important component parts of these slags were silica, alumina and lime, which formed about 90 per cent. of the whole. The two latter of these, however, chiefly exist as silicates. If to these caustic lime be added, the silicates are acted upon, and if the material be kept damp and exposed to the air, hardening is carried on for months.

If caustic lime be added to elags poor in lime, so as to bring this element up to 55 or process it may be converted into glass for

lime, so as to bring this element up to 55 or 60 per cent., it would be seen at once how closely it resembled the analysis of Portland cement, the composition of which is: Lime, to per cent.; silica, 24 per cent.; alumina, 8 per cent.; oxide of iron, 4 per cent. It appeared an absolute necessity for obtaining good results that the ferruginous material be calcined or roasted, the effect of which



Duryee's Petroleum Furnace.-Fig. 3. tion through A' B', Fig. 2.

was to drive off the carbonic acid and water and the reabsorption of the water, which united in chemical combination with the material, afterward assisted in hardening. The speaker proceeded to say that the most important production, and the one which consumed by far the greatest quantity of slag, were concrete bricks—known in the made a far better mortar than was generally employed by builders. As with the other slag products, its remarkable strength and cheapness combined made it much liked by those who, in close proximity to the works, obtain it freshly made.

One other manufacture from slag was carried on at the Cleveland Slag Works, which, although it did not consume much, was still of interest, viz., artificial stone. It is molded into chimey pieces, window heads and sills, future will probably grow in greatness of the demand. The girders do not arise like the ghosts to remind us of our folly in leav into chimey pieces, window heads and suis, wall coping and other ornamental work for builders. The stone is composed of two and one-half parts of Portland cement, and two and one-half parts of finely pulverized slag. The mixture is run into molds and the articles are ready for market in five or six days. A material containing so much lime, silics,

alumina, sulphur and magnesia in a condition like the white, soft slag sand, suggested its application as a fertilizer for some kinds of land. Three years ago, through the kindness of Earl Catheart, it was brought before the Royal Agricultural Society, and Doctor Voelcker reported that the result of his ex amination showed that it may be usefully employed upon moorland and peaty soils as a cheap and effective substitute for lime Since this report was made many hundred of tons had been sold for this purpose, and although there was only 32 per cent of lime in the slag supplied, the result habeen very satisfactory, particularly on langrowing potatoes. Had it been Bessemislag, containing from 40 to 50 per cent. lime, there could not be a doubt but that the results would have been still more satisfac-tory, and he felt sure that it would in somlocalities find a large outlet for this purpo-There now remained only one more applica-tion of blast-furnace slag for him to describ It was the manufacture of slag wool or sil ate cotton, so called from its resemblance of cotton wool. The first attempt at this man facture was in 1840, by Mr. Edward Parry in Wales, and a large quantity was made but no effort appeared to have been made confine the wool after production, comquently it floated about the works with the slightest breeze, and became so injurious the men that the process had to be abundant. the men that the process had to be abandone About four years ago Herr Krupp, of Esse, and a little later Herr Lurmann, of Geor marienhutte, in Hanover, both supplied great deal to the market, but the preci methods of manufacture had never transpire having been kept a secret at the works; an until two years ago it had never been ma successfully in England. Between 5 and tons of this wool are produced weekly at 11. Tees Iron Works. The paper was illustrate Tees Iron Works. The paper was illustrated by diagrams showing the new slag shippinapparatus for taking the slag to the North Gare breakwater, a slag cooling or slag shingle machine, a slag-sand machine, a slabrick machine, the building and machiner used in carrying on the manufacture of bricks, &c., at the works, the machine and ovens used for making the slag pavers by the Tees Scoria Brick Company, and also the apparatus used in the manufacture of slag wood or silicate cotton. or silicate cotton.

#### Belgian Competition with British Iron.

Concerning this subject the Newcastle

Chronicle says:

While America has gone in strongly for notions" in metal, Belgium has made it strong point manufactured iron for the building trade. The patriotic British fair trade, makes use of both individually; collectively he does not say much about hammers and corkscrews, but is very hot and strong on the subject of Belgian girders. Wherever two or three of our fair traders are gathered together Banquo rises in the shape of iron beams—their "skeleton at the feast" is a network of ties and girders proclaiming out industrial decadence. All this is a veritable FOUNDHYMEN'S METALLIC

Pattern Letters and Figures,
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Thompson's Patent for Wet Pulverization of Rocks, Ores, Rolling Mill Fix

AND OTHER MATERIAL.

slag, were concrete bricks—made from the sand manufactured iron which competes with our made in this country. Last year we instead described. The bricks produced (by the produced by the slag-sand machine which he described. The bricks produced (by the produced by the slag-sand machine which he described. The bricks produced (by the produced by the slag-sand machine which he described. The bricks produced (by the produced by the slag-sand machine which he described. The bricks produced (by the produced by the slag-sand machine which he described. The bricks produced (by the produced by the slag-sand machine which he described. The bricks produced (by the produced by the slag-sand machine which he described. The bricks produced (by the produced by the slag-sand machine which he described. The bricks produced (by the produced by the slag-sand machine which he described. The bricks produced (by the produced by the slag-sand machine which he described. The bricks produced (by the produced by the slag-sand machine which he described. The bricks produced (by the produced by the slag-sand machine which he described. The bricks produced (by the produced by the slag-sand machine which he described. The bricks produced (by the produced by the slag-sand machine which he described. The bricks produced by the slag-sand machine which he described. The bricks produced (by the produced by the slag-sand machine which he described. The bricks produced (by the produced by the slag-sand machine which he described. The bricks produced (by the produced by the slag-sand machine which he described. The bricks produced (by the produced by the slag-sand machine which he described. The bricks produced by the slag-sand produced by the slag-sand produced by the slag-sand produced by the slag-sand manufactured iron which competes with our own make is only 3 per cent. of the total made in this country. Last year we imworks, some of these bricks, taken from stock three years old, carried a pressure of twenty-one tons before crushing, while others only four months old were crushed with nine tons pressure, showing not only great toughness, but also that they greatly improved by age. The weight of these bricks was about 30 per cent. lighter than ordinary red ones— Jo per cent. lighter than ordinary red ones—
of x 4½ x 2½ inches—weighing only 2½ tons
per thousand. Another interesting feature
was the economy in manufacture. The process of brickmaking, as now carried on, was
extremely simple and inexpensive. The next
product mentioned was that of slag cement.
The word cement had sometimes been objected to in connection with this material,
because it was generally manufactured in
a wet state, and had to be used within a few
hours of its being made. Upon this point he themselves to it, and they have put down Centrifugal force applied to a rolling ball for the purpose of verizing. Tested thoroughly and guaranteed to yield a greater duct of pulverized material of equal fineness in a given time the less wear, less power, less first cost and less cost for repairs in stamps or any other pulverizer.

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Take the total in point of strength he found little difference whether the materials were ground together in a dry or in a wet state. The cost of production, however, was, as nearly as nearly as nearly as the special cultivation of this class of trade to the trade to Belgium is duc, runners for about an hour (the finer the better) 70 per cent. of common lime, and 15 per cent. of common lime, and 15 per cent. of common lime, and 15 per cent. of iron oxides, calcined ironstone, or spent pyrites. It required longer to set than Portland comment, and was, perhaps, not quite so manufactured iron than the whole of Belgium; it must be acknowledged that our constant of the production of the case of the vertical properity has not deepveted the special cultivation of this class of trade to the special cultivation of this class of trade to the special cultivation of the trade to Belgium is duc, the finer the state. It was made by grinding under edge runners for about an hour (the finer the state. It was made by grinding under edge runners for about an hour (the finer the state. It required longer to set than Portland comment, and was, perhaps, not quite so it, and they have put down the themselves to it, and they have put down the mount of the special cultivation of "wide, flat bars," by a process of production, however, was, as nearly as the state. It was made by grinding under edge runners for about an hour (the finer the special cultivation of the trade to Belgium is duc, the finer the state. It was made by grinding under edge runners for about an hour (the finer the special cultivation of the vert is common in Belgium; and it is first to the special cultivation of the vert is common in the vorted to see that is common pyrites. It required longer to set than Portland cement, and was, perhaps, not quite so hard; but there was a remarkable toughness which had surprised all those who had used it, and this toughness made it valuable for heavy machinery foundations, &o.; and when made in proximity to the furnaces the cost of the cement did not exceed 6/ per ton, while concrete made of this cement and slag import, as we have this year, 14,000 tons of this cement and slag import, as we have this year, 14,000 tons of this cement and slag import, as we have this year, 14,000 tons of the concrete made of this cement and slag import, as we have this year, 14,000 tons of the concrete made of this cement and slag import, as we have this year, 14,000 tons of the concrete made of this cement and slag import, as we have this year, 14,000 tons of shingle cost only 5/6 per cubic yard. These prices were absolute figures of cost, and he and joists—is one that is worth the attention knew of no material at a similar price which could compete with it. Slags from the furnaces making Bessemer iron were better adapted for this cement even than those from the Cleveland ores. Mortar for building purposes was also another material supince the Cleveland or the Cleveland or than those from the Cleveland or the considerable, and there is demand sufficient to make it worth the while of the Northern iron manufacturers to cultivate that trade ing purposes was also another material supplied at the Cleveland Slag Works. It was fit is not the fact that Belgium sends us a few simply made by grinding the slag sand with about 6 per cent. of slaked lime in an our own makers produce them that is important; the special fact that makes it worth made a far better mortar than was generally the attention of our ironmasters is, that if that country can beat us in our prodigally endowed mineral domain, it can also compet with us elsewhere. That is the grave fact that fair traders overlook, while they are aghast at a few girders landed on our shores To retain, then, our foreign trade, we must enter more fully into that which the plucky Belgians have cultivated, and which in th

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gium charges less for the carriage of her gium charges less for the carriage of her ironmaking materials than do our railwa she taxes her people and her traders less, and in other ways gives them facilities that we need here; and it is possible that our manufacturers will have to look to cheap er transit and lesser taxation to enable them to compete better. The question will ultimately land us in the consideration of the cort of compete better. The question will ultimately land us in the consideration of the cost of transit here, and the pressure of taxation, while it also suggests an inquiry into the hours of labor and the payment. The only way to obtain and retain trade is to produce cheaply and well—the Belgians have striven successfully to do this in regard to joists and girders, and if we are to command that portion of the trade it will have to be by similar means. similar means.

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The Ironmonger discusses as follows a sub-

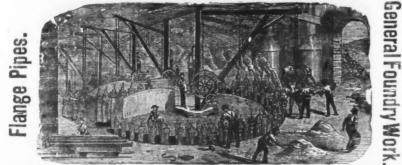
ict of interest to all retail tradesmen:
What is the cause of steamy windows?
The hackneyed answer that the cold outside condenses the moisture of the air is undoubtedly correct, but it does not explain how the noisture gets into the air. And as the air in the shop is warmer than that outside, its ower of retaining water in a vaporous con-ition is very much increased, so that the watery vapor in the air of the shop must greatly exceed that of the external air, or no leposit of moisture would take place. It is certain that the greatest deposit of moisture takes place in warm, well-closed shops, and the elca that the warmth has something to do with the deposit is a very natural one. A walk along the streets in a winter evening shows that the amount of moisture on the some will be almost free from it, others are as opaque as if they were of ground glass. For some time we have been trying to find the reason for this, and although we cannot explain all the anomalies we meet with, yet we think some light can be thrown on the matter. The best lighted and warmest shops seem to suffer most. Now, as warmth ought to decrease the deposit, provided the air could take up no more water as it got warmer, we must look for some means by which the we must look for some means by which the proportion of watery vapor in the air is increased with the temperature. This is at once found in the gas, which is almost universally used for lighting and very often for warming. For the amount of light given out gas produces very much more water than either oil or candles. If the ventilation between every here is of the short be thorough enough to keep the air of the shop nearly at the same temperature and humidity as that outside, no moisture will be deposited on the window. But if the air is at all con-fined, as the assistants will certainly wish it fined, as the assistants will certainly wish it to be, then as long as gas is burned and the products of combustion allowed to escape into the air, so long will the windows be obscured by moisture. As gas is the great offender, it is useless to provide air-tight windows, at enormous cost, if they be lighted with gas inside. We know a shop where some hundreds of pounds were spent in air-tight cases for the windows, where this mistake was made. Another source of moisture is the breath of Another source of moisture is the breath of the assistants and customers, and this seems to be sufficient to make it impossible to avoid all deposit on the windows. But if petroloum or electricity be used to light the shop, or if the products of the combustion of the gas be carefully removed, then the nuisance will be greatly mitigated. Some shops are lighted by "Sun" burners on the ceiling. The effect, as regards illumination, is excellent, and this plan makes it very easy to remove the products of combustion. Of course, if a gas stove be used to warm the place, and the products of combustion allowed to escape into the shop, neither petroleum nor electricity the shop, neither petroleum nor electricity will prevent steamy windows. Various con-trivances—such as open gratings at the top of the windows, double sashes, &c., have been toled, but the measure of success achieved appears to have been irregular and often disappointing.

Steel Production in the North of Ingland.—The London Engineering says: The output of steel in the Northeast of England has been very materially increased in the year 1881. It will be long before there are reliable figures procurable as to this branch of the metallurgical industries of the North, but the fact of a larger output is certain. The number of Bessemer converters in the Northeast of England has been very greatly increased, and of late the increase in greatly increased, and of late the increase in the capacity and in the total production has been more than equal in its growth with the increase in the number of vessels. At the present time, too, the whole of the works are very briskly occupied. In November the production of steel rails from the works of Bolckow, Vaughan & Co., at Faton, has been raised to 1500 tons weekly, and that of the raised to 4500 tons weekly, and that of the smaller works of the Darlington Iron Company has been brought up to about 1200 tons. Remembering that the Erimus Works have been commenced at South Stockton, too, it may be believed that although there may not have been so large an output in the early as in the late months of the past year, the total production of Bessemer steel in the North of England must have been double what it was England must have been double what it was in the previous year. And there are indications that there will be a continuance of that growth, for the whole of the steel mills are active, and the tendency at the present time is to enlarge the output, while the works of the Northeastern Steel Company are now being pushed actively on to completion. Thus it may be fairly hoped that the Northeast has become one of the chief of the steel rail-producing districts; and that in the early future it will give its energies to the producfuture it will give its energies to the produc-tion of steel plates and other forms of the metal that are almost certain to become in-creasingly used in a district that is one of the hief centers of the shipbuilding industry.

The Cedar Rapids Republican says: "Probably the largest plate casting ever made in lowa has just been cast in the foundry of G. B. St. John. It is to be the main landing of the iron staircase he is building for the new Presbyterian Church at Vinton, and is 6 feet 4 inches wide by 13 feet 8 inches in length. The entire surface on one side is furrowed into diamonds about half an inch in width, and the thickness of the whole plate is only eleven-sixteenths of an inch, decreasing at the edge to one-fourth of an inch."

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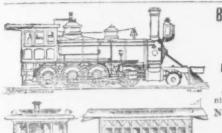
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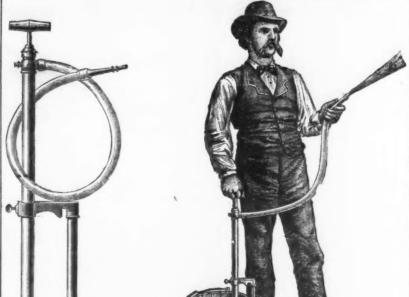
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BRIDGEWATER HORSE NAILS, 3d. FINE NAILS, Tack Plates and Forgings of Every Description. NAHUM STETSON, Jr., Agent, 73 Pearl Street, New York. tained at higher speeds. Recent experiments charge 40,000 tons of rock were dislodged.

Indicator Trials of Pumps. Indicator trials, such as are at the present time frequently conducted in connection with steam engines, have been rarely applied to test the working of pumps. A great number of these, and even such of large water works, have been subjected to indica-tor tests only in exceptional cases, and it is but of late that the results of such trials have been considered with due attention and recognized as the basis of all future improvements in the construction and economical working of pumps. No department of working of pumps. No department of engineering can boast of more proposed and practically-tested improvements than that of pump construction, and probably much of the time, skill and labor, in many instances spent without apparent succees, could have been more profitably employed had indicator been more profitably employed had indicator trials been previously resorted to. These should be conducted in a thorough manner, since by their aid alone can the causes of frequent disturbances in the action of pumps be detected. Such trials expose faulty construction and irregularities of action, and show that different modifications of valves often differ in behavior from what is cause often differ in behavior from what is cause. show that different modifications of valves often differ in behavior from what is generally supposed to be true. Many forms adopted with expectations of good results give anything but the desired effect. In a recent publication of "Indicator Trials of Pumps" by Mr. A. Riedler, of Munich, Germany, previously mentioned in these columns, the author dwells upon all the vital support of pumps of proper construction and gives questions of pump construction, and gives a number of indicator diagrams which are number of indicator diagrams which are highly interesting and instructive. Mr. Riedler used in his tests two indicators, one of which was a Thompson indicator, and the other a modification of it introduced by himself. In order to avoid the errors resulting from the imperfections of very stiff springs when experimenting with high pressures, he reduced the piston area of the indicator in proportion to the increase of pressure this. reduced the piston area of the indicator in proportion to the increase of pressure, this method yielding satisfactory results with pressures as high as 200 atmospheres. Mr. Riedler presents in his publication a number of trials of pumps in German mines, with the results obtained, which, however, are too numerous to give here. In regard to pump valves, the author states that one of the essential requirements is a reliable closure or orange at quirements is a reliable closing or opening at each change of stroke. Shocks in pumps, when produced by the valves, are generally attributed to the improper functions of the pressure valves, although it may be shown that they result directly from the suction-valves. When the latter are open and the that they result directly from the suctionvalves. When the latter are open and the
streke is reversed, it sometimes happens
that on account of insufficient weight of the
valves they do not close promptly, but remain open until a portion of the return
stroke has been passed over. The consequence is that when the valves do close a
shock is experienced, the violence of which
depends upon the velocity of the column of
water at the time of closing. The presence
of air in pumps has also the tendency to produce shocks, since the air must first be comduce shocks, since the air must first be comduce shocks, since the air must first be compressed before the water column is acted upon. The pressure valves, therefore, open only after a portion of the stroke has been passed over, and the velocity of the water must suddenly be accelerated until it is equal to that of the descending piston. Pumps should therefore be made perfectly air-tight, and it is only in pumps of faulty construction that air is sometimes attributed to cause smoothness of action. The indicator diagrams obtained from such pumps cator diagrams obtained from such pumps clearly show the presence of air. It someclearly show the presence of air. It sometimes happens that the cylinders of pumps of which the lower end of the suction pipe has been above water, are filled with air, and indicator diagrams obtained from such pumps are, in many respects, similar to those obtained from air compressors. In regard to the piston speed of pumps, it may be said that formerly I foot per second was considered as the limit, the idea prevailing that high velocity caused frequent shocks and other disturbances. There is, however, in theory no reason why pumps should not be worked at high speeds. Of course many difficulties will have to be overcome, and pumps will have to be improved in many respects before this end can be attained. It is stated that high piston speed is less objectionraspects before this end can be attained. It is stated that high piston speed is less objectionable than a great number of successive strokes, and consequently valves of large area, short travel and great weight are recommended. Such valves, when fitted to high-speed steam pumps (200 revolutions per minute) have given entire satisfaction. Mr.

TCHERS,

STAPLES,

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Etc.

minute) have given entire satisfaction. All Riedler expresses the opinion that the future of pump construction depends greatly upon the question of high piston speed. If it were possible to obtain a satisfactory working of the valves at speed equal to those of present high-speed steam engines, many of the defects of our present slow-working pumps would be removed and considerable advantage of the control of the fireless locomotive, which, as the Railroad Gazette removed. The control of the control of the control of the dispersion ations whatever.

with more perfect instruments gave similar with more perfect instruments gave similar results. The pressure line was generally straight at 20 or more revolutions, while variations occurred when the speed varied from 12 to 19 variations. Mr. Riedler also obtained indicator cards from the delivery pipe and air chamber, and his results and conclusions are exceedingly interesting, so much so that we shall feel justified in giving a more complete account at no distant date. a more complete account at no distant date.

#### English Imitations of American Axes.

The Ironmonger says: The recent reflec-tions made in the Ironmonger upon English axes for the colonies in connection with American competition, seem to have drawn the attention of more than one Sheffield firm to our position in this matter, and to the importance of entering the lists with American makers on something like the same basis. At all events there is undeniably a determination to use every effort to cut out the manufacturers of the United States in the important Australian markets, and attention is being devoted to three points, in two, at least, of which it is asserted that our compeleast, of which it is asserted that our competitions can claim the preference. These are price, quality and finish. With respect to the quality, there can be no doubt that English firms are thoroughly safe, but with regard to quotations and finish, they have, possibly, something to achieve, and, as we have said, the attention that has been recently bestowed upon the question promises to bear the best results. We saw to-day, at the works of a well-known local firm, a wedge ax made exactly on the American pattern, combining the maximum of power with the minimum of weight, and finished off to an combining the maximum of power with the minimum of weight, and finished off to an unsurpassable nicety. This ax, notwith-standing that the firm has to obtain the hickory handles from across the Atlantic, is going into the Canadian markets, and even into the States themselves, in both of which the wedge ax of American houses has hitherto reigned supreme. This evidence of a far-seeing and enlightened policy will be very pleasing to Englishmen, who have been irritated by the inroads America has made upon our specialties. The wedge ax differs materially from the ordinary English felling-ax. This is due to the difference between the systems of felling here and in the back-woods across the water. Here the wood-man strikes at the base of the trunk, and consequently requires a blade that will eke out his limited reach without losing any of his power. The blade, therefore, is more than double the length of the American wedge ax, and narrow in proportion to its length. The backwoodsman severs his tree at a point some 3 feet from the ground, and therefore wants an implement better adapted to a rectangular stroke. The ax popular in Australia is a sort of compromise these, and in this ax, also, the firm in question have determined to do their best to oust the American makes. They have now a representative well on his way to the Southern Continent, and they hope he will do some-thing to prepare the way for practical enter-prise. When the hardware trade of Australia was in the hands of the Jewish clothiers, and all sorts of rubbish were palmed off upon the settlers, the English manufacturers sus-tained a blow from which, in some respects, they have not yet recovered. Assiduous "nursing," good workmanship, fair prices and popular patterns now render the pros-pects of our heavy hardware firms fairly promising and hefore long we may hope to promising, and before long we may hope to see the English ax a favorite tool in the

Reflected Electric Light .- The experiments which have been conducted on board the Sultan at Portsmouth, England, with a view of ascertaining whether the electric search lights in men-of-war could be protected from the guns of torpedo boats by the adoption of reflected light under cover, have been concluded. The official trial was witnessed by officers from the Admiralty and the War Department and from the local Tor-pedo School. Four different kinds of lenses were tested for purposes of comparison, the intensity of the electric beam being measured by a Bunsen photometer and one of Sugg's burners. The apparatus used were a dioptric lens, a catoptric lens 90 cm. in diameter, the ordinary above-board ship's glass, which was similar in character, but only 60 cm. in diameter, and a reflector made of Chance's glass and silvered. The respective merits of each were found to be in the order mentioned,

would be removed and considerable advantages gained, which have not yet been applied in pump construction. The successful introduction of high-speed pumping engines in Bohemian and Silesian districts show the superior advantage which such engines possess. In these cases large valves of great weight are entirely dispensed with and small valves have been substituted which seem to work very well. The adoption of such valves will insure success even in pumps of poor construction. Indicator diagrams obtained by Mr. Riedler, showing the variations of pressure when pumps were working slowly, are very interesting. In connection with an experiment at the "Amalienschaft," in Kladno, Germany, it was found that when four pumps were in operation, delivering water into one delivery pipe, the diagram showed lines of uniform pressure, different speeds of piston producing no variations whatever. When, however, only two of the pumps were in operation, then with low gradual increase of locametric which, as the Railroad Journal of the "fireless locomortive," which, as the Railroad Journal of the "fireless locomortive," which, as the Railroad Journal of the "fireless locomortive," which, as the Railroad Journal of the "fireless locomortive," which, as the Railroad Journal of the "fireless locomortive," which, as the Railroad Journal of the "fireless locomortive," which, as the Railroad Journal of the "fireless locomortive," which, as the Railroad Journal of the motive," which, as the Railroad Journal of the motive," which, as the Railroad Journal of the fireless locomortives used of New Orleans friend motive," which, as the Railroad Journal of New Orleans friend motive," which, as the Railroad Journal of New Orleans friend motive," which, as the Railroad Journal of New Orleans friend invented by Dr. Lamm, and improved by a French engineer, Francque. It appears that a Paris suburban street line is fully equipped with them, and has been worked with them for four years. The road is six miles long for four years. The road is six miles two of the pumps were in operation, tives are employed, and the two ordinary then with low speeds a gradual increase of pressure was observed, increasing in proportions. The entire expense of the pressure was observed, increasing in proportion as the speed decreased. With a somewhat higher speed no variations were observed, the pressure remaining uniform. The motion of the water column may problem.

ably serve to explain these phenomena, for, when working rapidly its motion is more uniform than when working slowly, due to the varying influence of the air chamber.

Mr. Riedler repeated these trials several times and obtained corresponding results on each occasion. Previous trials showed considerable viriations of pressure with less than 125 revolutions, while uniformity was maintained at higher speeds. Recent experiments

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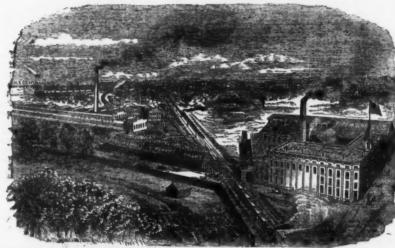
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Baker's, Beveled Edge, Bread, Cabinet, File, Flat and Half Round, Flat Shoe,

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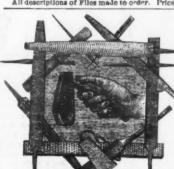
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# WIRE NAILS TACKS, SHOE NAILS,

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Any variations from the regular size or shape of the above-named goods made from sample to order.

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The Mill Bucket, in sizes from 3½ to 16 inches.

The Storehouse Bucket, in sizes from 12 to 17 inches This Bucket is struck out from the best charcoal iron; consequently is very durable. It requires 50 per cent, less power run it than the old-fashioned square bucket, and will outwear half a dozen of them. Over 300,000 are now in use by principal Millers, Brewers, Maisters and Manufacturers at home and abroad. It is the best Bucket made.

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THE ANSONIA WROUGHT GONGS, For Clocks, Indicators, Telephones, Call Bells, Bell Punches, Steamboat and

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STEEL PEN CO. ESTERBROOK sé John St., New York Works, Camden, N. J.

# HORSE NAILS.

Hot Ferged, from Norway Iron, Warranted Best Quality, Pointed and Polished

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#### SCIENTIFIC AND TECHNICAL.

Mr. Egmond J. Erichsen, of Copenhagen, has recently perfected an invention relating NEW APPLICATION OF ASBESTOS.

according to which pulverised asbestos, in a raw state or otherwise, is so combined with various silicious solutions and with metallic or other colors, as to produce new materials or compositions which partake of the nature of stone or enamel, being hard, dense, resisting oxidation, and heat, cold and dampness.

Applied as a paint, it forms a fire-proof enamel, resisting the influence of oxidation of iron coated therewith and the influence of white heat; for porous fire-proof materials the pores. It is applicable as a coating for building materials, such as stone, newly faced or decaying or decayed, ornamented faced or decaying or decayed, ornamented or plain, and cement castings and concrete; also for wood, for gas and water pipes inside and outside, for roofing felts and asphalt roofing materials, for roofing of iron and other metals, for the inside and outside of wooden and iron ships, and for brickwork to resist damp and atmospheric influences.

It is further suggested that the material is specially amplicable to the protecting of the latter of the felt was protecting of the felt.

Material.

Material.

Material.

Material.

Material.

Material. specially applicable to the protecting of the inside and outside parts of steam boilers exposed to the injurious effects of fire and air. Brick walls and wood articles to be coated with the new material must first be cleaned with water and soap, and then be rubbed in with a thin solution of silicate of potash 10° Baumé, so that it enters the pores. This impregnation should be done twice, with an hour between, but not in frosty weather, before the walls, bricks and wood articles are covered with the paint. White walls and ceilings may be covered with paper, which is then coated with the paint. The walls and ceilings so covered and coated can be washed with water whenever required to be cleaned. For coating boilers externally to prevent radiation of heat, a composition is made of asbestos fiber and silicate solution of 25° Baumé. It is made as a thick dough, and if put directly on the boiler in a layer about ½ inch thick it will harden quickly. It is preferable, however, to make a framework of hoop iron to suit the shape of the boiler surfaces, say about 34 or 1 inch wide, and with 2 to 4 inches square open spaces between, and having pegs standing out about 34 or 1 inch. This framework, when covered with the material mentioned, may be removed from the boiler whenever it is desired, without breaking the coating to pieces. It will be observed that the great pieces. It will be observed that the great recommendation of the invention is that nonfibrous asbestos, which has hitherto been comparatively unmarketable, will acquire a permanent commercial value.

The Bulletin du Ministère des Travaux Publics recently described a series of experiments conducted by officers of the Ponts et Chaussées Administration, Paris, for ascer-

taining The RESISTING FOWER OF BROKEN STONE employed in making and repairing roads. These experiments were directed toward two objects, to ascertain the resistance of different classes of stone to wear and to shock, and their resistance to crushing. The crushing tests were made in the ordinary way, but to obtain the comparative resistance to wear, &c., a standard of comparison was employed, the stone being submitted to treatment in a testing machine consisting of two groups of four cylinders each; these are mounted, side by side, on a bent frame, terminating in horizontal shafts, at one end of one group of which are mounted pulleys and gearing, in order to transmit motion to the other group. The distance of these shafts is 16 inches, and the cylinders are about 734 inches in diameter and 14 inches long. In THE RESISTING POWER OF BROKEN STONE other group. The distance of these sharts is to other group. The distance of these sharts is inches, and the cylinders are about 734 question of navigating such a vessel is still a inches in diameter and 14 inches long. In one of these chambers is placed a standard sample of porphyry, and in the other the stone to be tested; the charge averages about the stone to be tested to be tested to be tested the stone to be tested to II pounds. The machine is driven with a speed of about 2000 revolutions an hour, and the stones are subjected to attrition, and also to a to-and-fro motion from end to end of the cylinder. After about five hours the cylinders are emptied and their contents are carefully washed, the fragments precipitated being divided by sifting into three classes—those which will not pass through openings 0.39 inches in diameter, those decreasing from this size to 0.07 inches and the dust smaller than 0.07 inches. The first portion is returned to the stone being tested, and the third is weighed, the relation it bears to the original charge indicating the value of the material tested. Experiments showed form. Superior pattern, finish and quality, that the best samples yielded 2 per cent of

their weight in dust. has patented an

ratus, and is connected by means of a link or lever with a valve in the inlet pipe. outlet pipe communicates with the receiver, and the outer circumference of the inner vessel is supplied with a flange, in order to prevent the mercury from splashing. The gas, when entering through the inlet valve at very high pressure will, by means of the communication between the outlet pipe and the receiver, press on the surface of the mer- F the receiver, press on the surface of the iner-cury in the space between the two receivers and force it into the inner vessel. The plunger is thereby raised, and, censequently, closes or partly closes the valve, so as to re-duce the pressure. If the latter falls below the required degree, the plunger falls and opens the valve. The two concentric re-ceivers here described may be arranged side by side or otherwise if preferred. by side, or otherwise if preferred.

The following process has been patented

for the CONVERSION OF ORDINARY AGATE INTO ONYX. The dressed stones are first placed into nitric

in one liter of water until saturated, and are finally washed in water. By placing them again in nitric acid and washing, the alkali is removed from the outer surface of the stones, after which they are dried and thoroughly calcined. The stones thus treated are completely bleached and white, while their outsides are rendered porous, so that they can absorb coloring solutions, which gradually shade off into white, as in natural cours. in one liter of water until saturated, and are

Mr. Charles E. Emery, of New York, recently made some

EXPERIMENTS UPON HELATIVE NON-CONDUC-TIVITY,

with reference to the needs of the New York Steam Company. His apparatus consisted of a boiler 12 feet long and 4 feet in diameter, with three 10-inch flues passing through it. Inside these flues were smaller tubes, through which the steam passed. The non-

riais, the following	46	26	и	U	5	M	re	M	B		0	II.	) E	e	ш	n	e	a:
Material.														1	P	0	r	ivity.
Hair feit																		TOU.
Mineral wool, No. 2																		83.2
Mineral wool, No. 2 &	nd	24	LP.															78.5
Sawdust																		
Mineral wool, No. 1															ľ			67.0
Charcoal									*			۰				۰	o.	63.2
Pine wood, across gra	day				0 1	0 0				۰	0 4		0	۰	0	0	0	
Lane wood, across gri	F112		• •			٠	0 0		0	0 0		0	0 1	0 1		0	0	55.3
Loam						0 1		0	0 1	9 0			0 1			0	0	55 -
das works lime, slak	ed						0 0	a	0 0							۰		48.
Asbestos																		36.3
Coal ashes																		34.5
Fuel coke																		87.7
Air space, 2 inches de																		13.6
ur phace, a menes de				0														84.0

Some years ago Mr. Garrett, of England, designed and built

A SUBMARINE TORPEDO BOAT

which was propelled by manual power. In the autumn of 1879 a second boat was on-structed, one of its leading features being the means of propulsion under water, which was attained by having a very large steam boiler carrying a pressure of 130 pounds per square inch, this pressure being utilized after the fire was closely shut up and combustion stopped. From experiments which were carefully made, there is no doubt that the vessel was capable of being propelled under water a distance of about twelve miles, simply by getting a full head of steam with the aid of the blower before diving below the surface after which it was necessary to shut the aid of the blower before diving below the surface, after which it was necessary to shut up the fire-door and chimney, and then go on utilizing the latent heat, evaporating the water contained in the boiler just on the same principle as that adopted in Lamin's fireless locomotive, until its exhaustion would compel a return to the surface to blow up the fire again and recharge the boiler with water.
Owing to the untimely loss of the vessel off
the Welsh coast, it is to be regretted that experiments in keeping up the furnace heat
when the boat was submerged were not com-

The temperature of the ground surface is almost entirely dependent on the heat of the almost entirely dependent on the heat of the sun, and is therefore always greater in the daytime than at night. Considering all the circumstances which affect the temperature of the ground, there must be included the kind of exposure of the surface, the nature of the soil, the permeability of the ground by rain and the presence of underground springs, the sun's declination, the elevation above the sea, and the amount of cloud and sunshine. The temperature of the soil is observed at the Royal Botanic Gardens. observed at the Royal Botanic Gardens, London, three times daily at depths of 3 heir weight in dust.

Frank W. Clark, of Westminster, England, as patented an has patented an made. A series of observations made with unfailing regularity, extending over six of Gases,
the arrangement being as follows: In a
receiver of cylindrical or other suitable section a vessel of similar shape is placed, reacting nearly to the bottom. A space left
between the two vessels contains a small
quantity of mercury. The inner vessel is
provided with a heavy plunger, the rod of
which passes through the cover of the apparatus, and is connected by means of a link or

	At 9 a. m.	At 3 p. m.	At 9 p. m
	Deg.	Deg.	Deg.
Air at 4 feet	38.9	42.1	40.0
Surface of lake	39-7	40.7	40.2
3 in. below grass	37.3	39.1	37.9
6 in. below grass	38.1	39.0	38.8
12 in. below grass	38.1	38.3	38.3
24 in. below grass	39.5	39-4	39-4
48 in. below grass	41.0	41.6	41.6

	At 9 a. m.	At 3 p. m.	Atop. m
Ale at the above	Deg.	Deg.	Deg.
Air at 4 ft. above the soil	64.8	71.3	60.0
Surface of lake	66.3	70.1	68.4
6 in. below grass	63.4	70.4	68.3
12 in. below grass		64.8	65.9
8 in. below grass	60.5	60.5	60.5

These maxima mean temperatures occur in July, except those at 2 feet and 4 feet, which fall in August. At this the hottest portion acid, to extract the compounds of iron and of the year the temperature of the air is on ther metals, and are then dried and calcined to remove the remnants of nitric acid. Having done this they are seaked in a solution of the air is on the whole slightly below that of the water, but it has a greater diurnal range. The temperature of the soil is greater than that is the surface, it decreases of the air only at the surface, it decreases tion of 220 grains of caustie potash or soda of the air only at the surface; it decreases

Cuttery.

THE

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MARKS' REGISTRATION ACT.

BUTCHERS' KNIVES. BUTCHERS' STEELS, SHOE KNIVES.

It having come to the knowledge of JOHN WILSON that Counterfeit Butchers' Knives, purporting to be of his manufacture, are being sold in the United States, he hereby cautions all purchasers of his Knives and Steels to be on the alert against such imposition.

JOHN WILSON also hereby gives Notice, that it is his determination to institute Legal Proceedings against any person or persons, who may be detected infringing his Trade Mark. Every article of JOHN WILSON'S manufacture, bears the Trade Mark, in addition to the Name.

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## SHEEP SHEARS.



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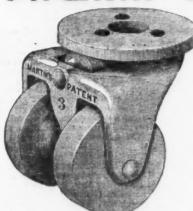
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Etc.,
Etc.,
Etc.,

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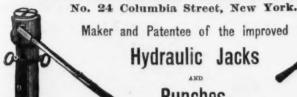
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38 4° in January.
38 4° in January.
40.9° in January.
iii. 41.7° in February.
iii. 44.8° in March.
iii. 46.4° in Aprii.
iii. 48.9° in June. 1 inch below soil... 38.4 inches below soil... 76.8 inches below soil... 153.6 inches below soil... 307.2 inches below soil...

Similarly the highest mean monthly temper

It thus appears that whereas the coldest temperature of the air is in January, the wave of cold (if it may be so called) travels slowly downward and does not reach 25 feet until June, and that whereas the hottest temperature of the air is in July, the wave of heat travels slowly downward, and does not reach 25 feet until November. At that depth the temperature decreases until June, then increases until November, whereas the thermometer bulb, covered by only 1 inch of soil, reaches its lowest and highest limits about the same time as the thermometer in air, shaded, and 4 feet above the ground. The retardation of cooling and of heating is greater the deeper the soil, though the yearly range decreases as the depth increases, down It thus appears that whereas the coldest ange decreases as the depth increases, down range decreases as the depth increases, down to the stratum of invariable temperature. The non-periodic fluctuations of cold and of heat which affect the air are not felt perceptibly beneath the surface of the ground.

A short time azo M. Marcel Deprez devised a simple graphical method of

CALCULATING DYNAMO-ELECTRIC CURRENTS for any speed of working of the machines, and for any resistance of the external circuit. The method consists in drawing what M. Deprez calls a "characteristic" curve for each machine, this being done by disconnecting the ring or armature coil from the electromagnets, and sending a current of known strength from a foreign source through these, and then revolving the ring at an alternating but constant speed. The difference of potential between the two ends of the ring is measured in the usual way. The current in the electro-magnets is then varied, and the correspond-ing variations of the electro-motive force of the ring are measured. By taking the in-tensities of the exciting current for abscisse and the electro-motive force of the induced current for ordinates, the characteristic curve is drawn. In the Gramme and like curve is drawn. In the Gramme and high machines this electro-motive force is proportional to the speed of rotation of the ring. The connection between the ring and electromagnets is next to be re-established, and the circuit of the machine closed by a wire of any resistance whatever. The foreign current is now, of course, withdrawn, and the machine is in its ordinary working condition. Pro-The connection between the ring and electromagnets is next to be re-established, and the circuit of the machine closed by a wire of any resistance whatever. The foreign current is now, of course, withdrawn, and the machine is in its ordinary working condition. Provided the total resistance of the circuit is known, the intensity of the auxiliary current can be at once determined from the characteristic curve. For let I be the intensity of this current; E, electro-motive force of the ring when open for a speed of unity; R the total resistance of the machine circuit, including that of ring, magnets and external work, and W the angular velocity of the ring, we have  $I = \frac{W}{R}$  and  $I = \frac{W}{R}$ ; but  $I = \frac{W$ efficient of inclination is proportional to  $\frac{1}{R}$ 

basis. The year 1881 opened with a very to defraud any of the complainants, and that hopeful feeling in the market, due chiefly to he will patent his inventions when he has the fact that when the annual returns were stead of an increase in stead of an increase in makers' hands, an actual decrease or attack and canada address the above, P. O.

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Direct States and Canada stead of an increase in stead of an increase in makers' hands, an actual decrease or attack to a circumstance while there are good prospects that une stocks of the previous year, had taken place, forest expectations were also formed regarding the probable extent of the American demand, and some speculation took place in the early part of January on this account. Shortly afterward information was obtained concerning the great extension of iron works adjustment for varying the great extension of iron works and the probable extent of the next three years, has just been taken at the Krupp Works, at a price equivalent to a fraction over \$52 per ton, delivered free at Santander. Nobody but the protected manufacturer at Essen would have thought of taking such an order at so low a stead of an increase or attack to a circumstance while there are good prospects that une will there are good prospects that une in the will there are good prospects that une in the stocks of the private stocks of the private stocks of the previous year, had taken place, for the proving the would be a mistake to anticipate any very considerable advance in prices. A contract for 14,000 tons of steel rails for the North of Spain railways, for delivery during the concerning the great extension of iron works and the proving the area of the proving the would be a mistake to anticipate any very considerable advance in prices. A contract for 14,000 tons of steel rails for the North of Spain railways, for delivery during the considerable advance in published at Christmas, it was found that instead of an increase in the stocks of pig iron demand was growing and becoming more satisfactory than in former years, and the rapid development in the Scotch shipbuilding trade brought into the market heavy contracts from the makers of malleable iron,

and from the foundries.

Such was the state of affairs when the proposal emanated from the Cleveland ironmasters that the number of furnaces produc-ing pig iron should be reduced. From a vastocks of pig iron were growing unwieldy, and that if the output was not curtailed they and that if the output was not curtailed they would be likely to operate unfavorably with reference to prices. In the month of August the expedient of reducing the production was again brought under consideration, and a conference of Scotch and Cleveland ironmas ters took place at Carlisle, with the result that an agreement was drawn up, binding both parties to extinguish a certain proportion of furnaces during a period of six

with the depth, and at 2 feet the diurnal range ceases. The results of the earth temperature observations made at the Royal agreement the Scotch ironmasters damped out sixteen blast furnaces in the beginning of October. The effect of this was to reduce Reductions." Referred to noon as the time of observation the lowest mean monthly temperature of the series are for the pig iron now than there would have been if this damping process had not been resorted to, it has not produced the good effects which were expected of it. Immediately after the agreement was entered into, early in August the prices of warrants began to advance. By the time the furnaces were actually put out, therefore, the influence of the step was almost fully discounted, and when in four works of fully discounted, and when in a few weeks af-terward it was seen that the deliveries into store, instead of diminishing, were really increasing, a reaction in prices set in, and the quotations until the present have been modrate in extent

Notwithstanding the extinction of sixteen

furnaces during the past three months the total production of pig has considerably exceeded that of last year. Up till the autumn ceeded that of last year. Up till the autumn the imports of Cleveland iron were steadily increasing, owing to the great demand at the manufactured iron works. There was at one time an increase of as much as 60,000 tons in these imports. This increase has since, by smaller weekly arrivals, been reduced by about one-half. The explanation of this circumstance is doubtless found in the fact that Scotch ironmasters, not finding a very ready market for their iron abroad, have been selling out to owners of the malleable works, either directly or through brokers, on very moderate terms. The question whether the Scotch or Cleveland foundry and forge iron should be employed is, to a great de-gree, one of the difference in prices. The Scotch iron, it need hardly be said, is of su-Scotch iron, it need hardly be said, is of superior quality, and when the prices are only a little above those of Middlesbrough plus the cost of freight and transit, manufacturers naturally prefer to use a larger quantity of Scotch iron. As a consequence, the consumption in foundries and in malleable and steel works has been larger than it was last year. But the advantage gained in this way has been lost by a decline in the foreign exports, which have fallen off to the extent of about 93,000 tons as compared with those of about 93,000 tons as compared with those of 1880, and there still remains unsolved the difficult problem of what is to be done with the heavy stocks. There is no doubt what-ever that, while they have tended to ever that, while they have tended to keep down prices and prevented ironmas-ter and merchant from making such large profits as they would have liked, they have operated most beneficially in checking pure speculation and in promoting a feeling of confidence throughout the different branches of the iron trade. It is largely due to the cristence of heavy stocks and the due to the existence of heavy stocks and the consequent moderation in prices that the different branches of the manufactured-iron current by drawing through the origin of the characteristic curve a straight line whose co-ward of inclination is preparational to whose co-ward of the co-war

The point of intersection of this line with the curve will have for its abscisse the intensity of current sought, and for ordinate the generating electro-motive force of the current.

The Iron Trade of Scotland.

The Collery Guardian, in a review of the iron and coal trades of Scotland, says that at no time during the course of the Scottish iron trade has there been any great axciterior trade has there been any great axciterior.

About three months ago the New York stockholders of the Keely Motor Company went to Philadelphia and declared that unless Mr. Keely should reveal to them the secret of his motor they would carry the matter into court and there compel him to tell how he acquired the power which he used to run the engine. When the facts were made known to Mr. Keely he refused to divulge his secret, and the result was that a bill in equity was filed against him last week. Through his iron trade has there been any great excitement in the market. The business has for the most part proceeded in an even, quiet and steady manner, and transactions have apparently been conducted upon a very sound his secret. He avers that it is not his desire completed them.

After a cruise of a few months in the South Pacific Ocean, a French man-of-war was recently found to have specimens of living coral growing upon her hull, which interesting discovery has thrown some light on the question of the rapidity of growth of corals. The evidence tends to show that the vessel on passing a reef of the Gambier Islands, against which it rubbed, had picked up a vene funcia, which adhered to the ing pig iron should be reduced. From a variety of causes this proposal was not at first up a young fungia, which adhered to the entertained, but as the weeks proceeded it became more and more evident that the stocks of pig iron were growing unwieldy, nine weeks.

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#### The Tariff Agitation in Austria. Mr. Weaver, the Consul-General of the

Mr. Weaver, the Consul-General of the United States at Vienna, has transmitted to the department a report on the proposed protective duties on imports into Austria:

At the present moment there is being carried on in this empire a vigorous discussion in regard to the protection of home industries by means of increased entry duties. In the early part of the year the chambers of commerce had prepared and sent to the largest manufacturers of the country, soliciting exhaustive replies, long lists of interrogatories relative to the condition of trade and the effect of foreign competition. The general result of the investigation and discussion of the country of the sion of the question by the press, industrial societies and chambers of commerce warrant us in expecting in the early future—probably at the next session of the Reichsrath—an effort on the part of manufacturers to have their interests further protected by increasing the duties on cortain classes of important ng the duties on certain classes of importathous in order to protect their domestic industries. Recently the subject has been discussed in the Chamber of Commerce for Lower Austria, in Vienna, where, according to the report based on statistical information, it was shown that for 1880 the importation of pig and scrap iron amounted to 56,000 tons, being one-sixth of the domestic production, which was claimed to be excessive and dangerous to the home interests, to obviate which an increase of 70 kreudsers was asked to be added to the present duty of 50 kreutzers per 100 kg. A similar con-50 kreutzers per 100 kg. A similar condition in regard to nearly all metal products and manufactures, including machinery, lo-

and manufactures, including machinery, lo-comotives and wagons, was demonstrated, and a similar remedy proposed.

In regard to the cotton-spinning industry, it was shown that the 47 spinning factories, with 581,000 spindles, in existence in Austria proper in 1854 had diminished at present to 29 factories, with 406,464 spindles; that the tariff of 1879 had produced little, if any, benefit, and that while the average annual importation of cotton yarn in Austria-Hun-gary during 1876-80 amounted to over 21. importation of cotton yarn in Austria-Hungary during 1376-80 amounted to over 21,000,000 florins, the exports for the same period did not amount to 1,000,000 florins.
To remedy this it was proposed to increase (about 50 per cent.) the present tarfff from 6 to 20 florins per 100 kg. And as the same unsatisfactory condition was claimed for other yarns and textiles of every nature, the same increase was likewise demanded for these articles. It should not be understood that opinion was by any means unanimous that opinion was by any means unanimous that such a proposed remedy would be ef-fectual, but while a contrary opinion was oc-casionally raised and strongly argued, the final outcome of the discussion was that the resolution of the report to ask for increased duties on these articles was carried by large and important majorities, so that the matter will almost certainly at an early day be brought to the notice of Parliament. But as the dual form of this government makes every change of policy difficult, particularly in respect to protective duties, to which Hungary, as an almost exclusively agricultural nation, strongly objects, as it taxes her inhabitants for the benefit of Austrian maninnablants for the benefit of Austrian manufacturers, it is questionable if the design of the protectionists will succeed, unless after a hard battle and mutual concessions to the Hungarians in other directions.

Electric Lighting in Sheffield,—Messrs. Henry Bessemer & Co., of Sheffield, England, have, within the last few weeks, lighted the whole of their establishment on the Brush system. A 16-light machine has been found sufficient for the purpose, and the lamps (nominally of 2000 candles each) are distributed as follows: Four lights are distributed over the turning and fitting shops, covering an area of nearly 12,000 square reached, in the main the book is accurate and covering an area of nearly 12,000 square feet. Three are in the forge, which has an area of 11,250 square feet. Here it was found necessary to suspend the lamps by cotton cords, as the constant vibration in the shop affected the regular action of the lamps, by disorganizing the feed mechanism of the carbons. In the tire mill, one light is found sufficient, and one is also ample for each of the converter houses. It is worth remarking that during a blow the intense gages, taxation, trade-marks, wills, &c. of the carbons. In the tire mill, one fight is found sufficient, and one is also ample for each of the converter houses. It is worth remarking that during a blow the intense light from the converters entirely eclipses the light of the arc, which is then visible only as a feeble glow. In the pattern shop one light is also ample, the whitewashed walls of this building reflecting the light until it is as brilliant as average daylight. The remaining four lights are distributed over the yard, and here the contrast is perhaps more striking than in any other part of the works, the whole area being well illuminated, and rendering work easy.

Mercial terms, corporations, employer and employee, executions, freight, legates, in surance, judgments and executions, mort-gages, taxation, trade-marks, wills, &c.

Cornish Pumping Engines.—According to the London Mining Journal, the number of Cornish pumping engines reported for November, 1881, is 15. They have consumed 1167 tons of coal, and lifted 7.8 million tons of water 10 fathoms high. The average duty of the whole is therefore 45,200,000 pounds lifted 1 foot high, by the consumption of 112 pounds of coal. The following engines have exceeded the average duty: Carn Brea, 50 and 90 in., 46.7 millions; Dolcoath,

directly into ozone by the action of light. The oxygen used in his experiments was prepared from chlorate of potash and was very pure. It was contained in a glass bell jar, which, together with all the other vessels employed, was coated with blackened paper to exclude the light and keep the oxygen dark. While in this condition the oxygen dark. While in this condition the oxygen to exclude the light and keep the oxygen dark. While in this condition the oxygen thannah Furnace, Mahoning Valley Iron Co..... 76 - PHILADELPHIA, PA.

dark. While in this condition the oxygen had no action in the ozone test with which it communicated; but when the rays from an oxyhydrogen lime light were reflected upon the bell jar so as to fall upon the gas within for twenty-five minutes, the solution of iddies of postash and amidon used as an of iodide of potash and amidon used as an ozone test became blue, and indicated the presence of that substance. The discovery, if it be sufficiently verified, will throw considerable light on the physiological action of olar radiation.

Exports of Merchandise from New York to Foreign Ports for the Year Ending December 31, 1881.

In addition to tables already published, we present the following, showing the quantity and valuation of various articles of merchandise exported from New York during the year ended December 31, 1881 :

Quantity. Value

Mowers and reapers, No	6,072	\$644,777
Plews and cultivators, No	13,860	104,204
Agricult'l implements, all other.		1,409,863
Bells and bell and bronze metal.		3,955
Brass and manufactures of		288,067
Cars, railroad, No	1,055	636,704
Clocks, and parts of		1,030,978
Coal, anthracite, tons	64,814	264,290
Coal, bituminous, tons	486	5,914
Copper ore (112 lb), cwt	113	1,279
Copper, pigs, bars, sheet and old,		
Copper, other manufactures of.	089,534	1,136,419
Copper, other manufactures of		41,848
Iron, pig. m	684.320	19,419
Iron, railroad bars or rails, b	800,000	23,08x
Iron, other manufactured	469,040	18,935
Iron car wheels	9.584	98,089
Iron stoves and parts of		90,976
Iron steam engines, locomotive.		3-131-
No	159	387,150
Iron steam engines, stationary,		3-11-3-
No	67	48,576
Iron machinery	****	3,311,397
Iron nails and spiker, b	147.877	176,087
Iron, all other manufactures of	-401-00	4,065,953
Steel cutlery		85,035
Steel edge tools		1,035.794
Steel files and saws	****	33,841
Steel muskets, rifles, &c		846,396
Steel, all other manufactures of.		437,594
Jewelry and other manufactures		1371334
of gold and silver		328,655
Cartridges and fuses		173,315
Quickederor D.	Bottro	39, 165
Sewing machines and parts of Steam and other fire engage		1,901,570
Steam and other fire engance		-19137
and apparatus	0.0	~ 2 449
Tin, manufactures of		94,527
Zinc, ore and oxide, cwt	19,020	16,437
Zinc, plated or bars, D,	390,190	116,484
Between \$30,000,000 and	\$40,000	0,000 of

petroleum have been shipped, about \$54,000, oco in wheat, \$22,000,000 in flour, \$19,000,-000 in corn, \$30,000,000 in cotton, \$34,000,-000 in bacon, \$14,000,000 in cheese, \$25,000,-000 in lard and \$12,000,000 in tobacco

#### NEW PUBLICATIONS.

Spon's Engineers' Tables. By J. T. Hurst. Fourth edition; 1½ by 2% inches; 140 pages; in cloth case. Price, 60 cents.

This little work consists of a series of tables and memoranda for engineeers, covertables and memoranda for engineeers, covering in a very small space much of the ground usually found in the larger engineering handbooks. The number of tables and the amount of information is very much greater than it would appear possible to place in so small a space. Among the leading subjects we have excavators' memoranda, bricklayers' memoranda and memoranda for slaters, carpenters and plasterers. There is a chapter devoted to the smith and founder; another one devoted to the weight There is a chapter devoted to the smith and founder; another one devoted to the weight of sheet lead, lead pipes, zinc and zinc nails, &c. Mensuration, hights of the barometer, dew points, girders and hydraulies also have considerable space each. There is also a chapter on weights and measures. The pocket-book is inclosed in a small cloth case, and, we think, is the smallest engineering pocket-book ever issued. The tables and pocket-book ever issued. The tables and data are all computed for use in England.

COMMERCIAL PRECEDENTS By Charles Putzel and H. A. Bähr. Published by the American Publishing Co. Bound in cloth. Price, \$3.

This work is a compilation of replies and decisions on commercial matters selected from the columns of the New York Journal of Commerce, and is a convenient work of reference. Commerce, and is a convenient work of refer-Commerce, and is a convenient work of reference for business men generally. We have not space to enter into a criticism of the book, but will say that its general arrangement and the character of its contents recommend it to general perusal. While we should take exception to some of the conclusions reached, in the main the book is accurate and contains much information. An alphabetic

An Interesting Discovery.—M. J. Dessan, a French chemist, who has been for years engaged in the study of oxygen and ozone, finds that oxygen can be transformed directly into ozone by the action of light.

The oxygen used in his experiments was

Co.
Grace Furnace, Brier Hill Iron & Coal Co.
Brier Hill Furnace, Brier Hill Iron & Coal Co.
Spiegel Furnace, Brier Hill Iron & Coal Co.
Girard Furnace, Girard Iron Co.
Niles Furnace, Girard Iron Co.
Mary Furnace, Ohio Iron and Steel Co. Total daily production...

La Lumière Electrique describes a curious application of electricity to prevent military conscripts practicing fraud as to their stature by bending their knees. When the conscript stands erect against the measuring post the hind parts of his kness press on electric contacts, causing two bells to ring; the ringing ceases when there is the least bending. The sliding bar which furnishes the measure has also a contact which is pressed by the head, whereby a third electric bell is affected. For a correct measurement the three bells should ring simultaneously. This instrument is employed in the Spanish army The total amount of copper produced by

# The Iron Age

#### Metallurgical Review.

New York, Thursday, February 9, 1882.

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The letter from Benj. Atha & Co., of Newark, N. J., to the Sheffield Daily Telegraph, published in the letter of our English correspondent in our last issue, not only applies to the case in question, but it might be regarded as an answer to scores of similar complaints. Messrs. Atha & Co. it seems had hired, through an agent at Sheffield. two men who represented themselves as competent rollers, at the rate of \$6 a day. They were engaged as first-class rod-rollers, competent to take charge of an 8 or 9-inch train any interest by this bill. Indeed, it may be and turn out properly the work given them fairly said that the Bessemer steel interest is because at the former date our market was factors, rests mainly upon the inexact but

wages lowered, and they wrote a complaining letter home. Messrs. Atha & Co. now make the statement that they were not competent workmen; that one of them, for example, was not able to "get the size," and did not do so all the time he worked for them for him at all times, and he was wanting in the very particular in which they desired hardship? Some of them do not think make claims that the result does not justify They learn that it is not possible to palm off as good work in this country what would not pass as good work abroad. In a word, that a good workman here means the same as a good workman in England, and a poor workman in England by crossing the sea does not become a good workman. If English workcoming to this country would bear this in mind, they might often save themselves a great expense and disappointment.

#### The Mckinley Bill.

Those who are acquainted with the hisory and character of the McKinley bill, which is about to be reported to the House of Representatives from the Committee on Ways and Means, cannot have failed to notice the persistent attempts to misrepresent its meaning and intent. The character of this misrepresentation is that the McKinley bill is asked for by but one interest, that it was introduced into Congress at the instance of the representatives of this interest, and that it is an attempt to legislate in favor of this interest alone. A correspondent of the Philadelphia Telegraph, in its issue of January 26, says: "Really the object of 'this bill is for the purpose of preventing "the further importation of steel blooms into this country." The New York Times of February 3, in an editorial, says: "As has already been pointed out in our columns, the McKinley bill is an attempt to levy a very much higher tax on steel blooms than they now bear, a tax which would fall upon the iron rail mills which have of late been using these blooms 'for the manufacture of steel rails." In the same paper of January 28 appeared a communication setting forth in substance the same idea, an extract from which Messrs. Post, Martin & Co., of New York, have had printed and circulated quite extensively. So, also, in the Pittsburgh Leader of a recent date, appeared an interview with Representative Springer, of Illinois, in which it was repeated that the bill was in the interest of the Bessemer steel manufacturers. In a word, we do not now recall a single article in any paper referring to the McKinley bill that has not declared that it was introduced and is being pushed solely in the interest of the Bessemer steel producers. Now, there is not one word of truth in this. So far from its having been introduced at their suggestion, they were not aware of its introduction, and as these mills have themselves been among the largest consumers of imported materials that will be affected by the passage of this bill, it is questionable if they would have advised its introduction this year if they had been consulted. The McKinley bill is substantially the same

in the last Congress. Indeed, as it was originally introduced by him into the present Congress it was identical with the one introduced by him last year. The bill passed the Senate for want of time. Now, Mr. McKinley represents a district in which there is not ber 31, 1881. a single Bessemer steel mill, and the bill was Iron and Metal Markets. Financial. General Hard- not introduced by him at the suggestion or request or with the knowledge of any Bessemer steel manufacturer, but at the request of the manufacturers of hoop iron, and to correct the outrageous and absurd decisions on hoop iron. It is the hoop-iron manufacturers and their workmen who urged its passage The animus of the attempt to saddle this bill upon the Bessemer steel manufacturers is too apparent to deceive any but those who wish to be deceived. The cry of monopoly has been raised all over the land against these men, who are in a legitimate way engaged in a legitimate business, and many good people who do not know the facts have deceived thereby, and have believed that these manufacturers are like the daughters of the horse leech in their insatiate de mands. The persons who have raised this cry evidently believe that if they can couple this bill with the Bessemer steel interest that alone will kill it, and this is the animus of the cry. The facts in regard to the recent decisions on steel blooms are alone sufficient to answer gestion of the Bessemer steel manufacturers. we have already stated, a large proportion of of merchandise at New York,

bill as the one introduced by Mr. McKinley

the iron or steel interests in the country. We think this effectually does away with the charge that the bill is in the interest of the Bessemer steel men.

But it is argued that this would stop the iron rolling mills from rolling our steel rails The chief roller was obliged to find the sizes except from blooms bought from American mills. Well, suppose it does. Is this a great him to be proficient. The point we desire and when the proper time comes it will be to make is that many of these complaints found that a number of these mills will be of poor wages that go back to England found urging the passage of the McKinley from workmen who have come to this bill. But, after all, these are side issues so ountry are true, and the wages are poor far as the bill is concerned. The simple because the workman is poor. Many of question is, is this bill just? All that this these workmen have so much confidence in bill does is to say that the tariff law of 1864 their own ability and so little in the skill or shall be enforced in the spirit that its framers ability of the American workman, that they intended it should be and that the true spirit of all taria legislation shall prevail.

#### Stock Inflation and the Price of Merchandise.

It is instructive, at this juncture, to draw comparison between the course of prices on the two leading stock exchanges of Western men who are considering the question of Europe in 1881, and again to compare the changes in value there with the merchandise markets in Europe and America. In order to do so, we have prepared a few tables, the first showing the difference in the quotations of leading stocks on the London Stock Exchange, comparing the lowest figures in 1879 with the highest in 1881, and with those at the close of the latter year :

Stocks.	Lowest.	Highest, 1881.	Dec. 31, 1881.
Consols, 3 per cent		103	9934
Metropolitan, 31/4 per cent	98	10856	106
Canadian bonds, 4 per cent		108	104
New Zealand bonds, 41/2 per ct.	93	104	101%
Victoria bonds, 4 per cent	87	105	103
India R. R. debentures, 4 p. ct.		103	105%
Austrian paper rente	58	6338	65
Brazilian gold bonds, 4% p. ct.		95 81	94
Egyptian unifled debt, 4 p. ct.			714
French 3 per cent. rente		8616	
Hungarian 6 p. ct. gold bonds.	*****	103%	10372
Italian rente Norwegian 4% per cent. loan	7234	93%	891/2
of 1878	1	200	
Russian 5 per ct. loan of 1871.	80	308	106
Spanish 3 per ct. loan for debt.		95	87%
Turkish bonds		17%	30
United States 41/2 per cents	9% 106	31856	1478
London & Northweatern R. R.	137	172%	378
Sheffield A		64 %	5436
Great Western	9134	13834	13834
Brighton A	10234		140
Southeastern ordinary	880	140	141
Great Eastern		7836	73%
		DCC.	recoil
		24 %	3 %

While the general advance in London was only 24 per cent. during the period named, 3 per cent. thereof was lost before last year came to a close. This shows that London was, during the latter part of 1881, preparing for the storm. To what extent Paris, on the other hand, was more sanguine than London, will appear from the following table, showing the advance in all 1881, which was no less than 47 per cent .:

		Dec. 28,	Dec 27.
	Stocks.	1880,	1881.
	3 per cent. rente	84.92%	83.85
	3 per cent, ditto fundable	87.20	85
	5 per cent. rente Egyptian bon 18	119.69%	113.75
	Egyptian bon 18	362.	350
1	Italian loan	88 40	90.15
ı	Banque d'Escompte	820	875
ì	Banque de Paris	1170	1390
ı	Compteir d'Escompte	1000	1050
1	Crédit Lyonnais	1040	805
١	Crédit Mobilier	690	730
ı	Crédit Foncier	E46E	1760
ı	Société Générale	607	820
1	Banque Franco-Egyptienne	700	905
ı	Ranque Parisienne	789	717.50
	Union Générale	935	3795
	Lander Bank	747	3155
J	Banque Ottomane	551	838
	Turks	40	61
ı	Spanish 3 per cent. for loan	2156	2936
١	Rio Tinto Copper Mining Co	467	753
	Eastern railroad	760	775
	Lyons ditto	1510	2715
Ì	Southern ditto	1130	1320
ì	Northern ditto	1748	3300
	Orléans ditto	1291	1300
	Omnibus	1375	2081
ı	French railways	607.50	705
	Lombardian ditto	990	3:6
	Suez shares	1265	3170
	Panama ditto	495	580
	Ditto founders' shares		68co
	Advance, 47	%.	

House in the last Congress, but failed in the Our own stock market, meanwhile, declined 13 per cent. between September 7 and Decem-

COURSE OF PRICES OF LEADING MERCHANDISE IN

		-			_	-			
		ua:	ry 1.	J	aly (85)	I.	Jan	ua:	ry I.
Coffee, Java, g'd ord. cents Sugar, raw. Java,	3814	to		37	to		3454	to	
No. 14, francs Sugar, beet root.	31	to	+ 0	33	to		35	to	* <
francs, Sugar, refined	28	to		29%	to		2754	to	* 4
No. 1, francs Rice, Rangoon,	3316	to		3319	to		32%	to	
francs Nutmegs, No. 1.	5	to	53/8	5	to	436	436	to	431
ents	160	to	165	165	to	168	148	to	150
cents	2 36	to		27%	to		28	to	- 4
Maryland, cts. Madder, prime,	15	to	18	15	to	18	15	60	18
francs	34	to	35	30	to	34	33	to	34
Sp. turpentine, Americ, fr'ees Logwood, Do-	2136	to		23	to		2616	to	
mingo, francs. C tion, middi.,	376	(0		314	to		3%	to	
Americ., cents	3810			34	to		37		
Rosin, Americ.,	54%			5436			6714		
Palm Oil, prime,	316			3'5			3%		6.6
W.Coast, fracs Rapeseed oil,				1734			1756		
cash francs Petroleum, re-	32		* *	33			35%		* *
fined, francs	13%	10	4.4	9%	to		914	to	4.6

The preceding table shows that while the the cry that this bill is introduced at the sug- stock exchanges were running wild, the leading articles of merchandise in Hol-It is a fact that both of the importations of land remained more or less stationary, steel blooms which formed the subject of the on the whole; but as the list does not appeals that were lately heard before Judge embrace breadstuffs and provisions, we Folger were for Bessemer steel mills, and, as shall have to examine the course of prices which the steel that has been imported under these correspond more or less with the Euroomnibus clauses" has been for Bessemer pean ruling, if the charges are added, steel mills, so that, so far as importations are and will, therefore, answer our purpose. concerned, they would be as badly hurt as In the tables below we have selected Sept.

to do. These men were discharged or their less anxious for this bill than any other of quiet and depressed, and probably, on the hitherto accepted method of ascertaining articles which were the product of industry

Articles of Food.

Flour, extra state		\$5.00
Wheat, white, No. 1		1.40
Indian corn, No. 2	.641/2	.70%
Oats, No. 1, white	. 38	-53
Pork	8.75	86.75
Bacon		.09%
Lard	.06%	.11%
Butter	. 78	.40
Eggs	.15	.29
Chease	.0516	.101/2
Rice	.0734	.071/4
Sugar, Cuba refining	.0634	.0736
Coffee, fair Rio	.13%	.10%
Cocoa, Guayaquil	.1956	.14%
Alcohol	.29	-37%
Domestic whiskey	2.06	1.15
Advance, 50 per co	ent.	
	Claud .	Yen -
	Sept. 1,	Jan. v,
Industrial Articles.	1879.	1882
Tallow	\$0.05%	\$0.07 7/8
Tallow Stearine	\$0.05%	\$0.07%
Tallow Stearine Refined petroleum	\$0.05% .05% .ot %	\$0.07 % .11 ½ .07
Tallow. Stearine Refined petroleum. Cotton, middling uplands.	\$0.05% .06% .00% .00%	\$0.07 % .11 ½ .07 .11 %
Tallow Stearine Refined petroleum Cotton, middling uplands Manila hemp	\$0.05% .06% .01% .01% .12%	\$0.07% .11½ .07 .11% .11
Tallow. Stearine Refined petroleum Cotton, middling uplands. Manila hemp Sisal ditto.	\$0.05% .06% .01% .13% .07%	\$0.07% .11% .07 .11% .11 .06%
Tallow. Stearine Refined petroleum Cotton, middling uplands. Manila hemp Sisal ditto. Indigo, Bengal	\$0.05% .06% .01% .12% .07% .05%	\$0.07% .11% .07 .11% .11 .06% I.37%
Tallow Stearine. Refined petroleum. Cotton, middling uplands. Manila hemp Sisal ditto. Indigo, Bengal Cochineal, silv. Teneriffe.	\$0.05% .06% .01% .01% .02% .07% .05% I.25 .58	\$0.07% .11½ .07 .11% .06¼ 1.37%
Tallow. Stearine	\$0.05% .06% .00% .00% .03% .07% .05% I.25 .58 .67%	\$0.07% .11½ .07 .11% .21 .06¼ 1.37% .44
Tallow. Stearine. Refined petroleum. Cotton, middling uplands. Manila hemp Sisal ditto. Indigo, Bengal. Cochineal, silv. Teneriffe. India rubber, fine Para. Hides, B. A.	\$0.05% .06% .00% .00% .00% .07% .05% 1.35 .05% 1.35 .58 .67% .21%	\$0.07 % .11 % .07 .11 % .11 .06 % 1.37 % .41 .90 .23 %
Tallow. Stearine Refined petroleum Refined petroleum Refined petroleum Refined petroleum Sisal ditto Indigo, Bengal Cochineal, silv. Teneriffe India rubber, fine Para Hides, B. A. Copper, Lake	\$0.05% .06% .00% .00% .03% .05% .05% .05% .05% .05% .05% .05% .05	\$0.07% .11½ .07 .11% .21 .06¼ 1.37% .44
Tallow. Stearine Refined petroleum Cotton, middling uplands Mania hemp Sisal ditto. Indigo, Bengal Cochineal, silv. Teneriffe Iudia rubber, fine Para. Hides, B. A. Copper, Lake Tin, Straits.	\$0.05% .06% .00% .01% .03% .05% 1.25 .58 .07% .21% .16%	\$0.07% .11½ .07 .11½ .06¼ 1.37½ .44 .90 .23½ .20¼
Tallow. Stearine	\$0.05% .06% .01% .01% .02% .02% .05% .05% .58 .67% .21% .16% .04	\$0.07% .11½ .07 .11% .11 .06¼ 1.37½ .41 .90 .23½ .20¼ .20¼
Tallow. Stearine Refined petroleum Cotton, middling uplands Mania hemp Sisal ditto. Indigo, Bengal Cochineal, silv. Teneriffe Iudia rubber, fine Para. Hides, B. A. Copper, Lake Tin, Straits.	\$0.05% .06% .01% .01% .02% .02% .05% .05% .58 .67% .21% .16% .04	\$0.07% .11½ .07 .11½ .06¼ 1.37½ .44 .90 .23½ .20¼
Tallow. Stearine	\$0.05% .06% .01% .01% .02% .02% .05% .05% .58 .67% .21% .16% .04	\$0.07% .11½ .07 .11% .11 .06¼ 1.37½ .41 .90 .23½ .20¼ .20¼
Tallow. Stearine Refined petroleum Cotton, middling uplands. Manila hemp Sisal ditto Indigo, Bengal Cochineal, silv. Teneriffe India rubber, fine Para Hides, B. A Copper, Lake Tin, Straits Lead Spelter Antimony Pig iron	\$0.05% .06% .01% .01% .01% .05% .05% .05% .13% .21% .21% .10% .05% .05% .05% .05% .05% .05% .05% .0	\$0.07% .11½ .07 .11% .11 .06¼ 1.37¼ .44 .90 .23¼ .20¼ .24½ .20¼ .24½
Tallow. Stearine Refined petroleum Refined petroleum Refined petroleum Refined petroleum Sisai ditto Indigo, Bengai Cochineal, silv. Teneriffe Iudia rubber, fine Para Hides, B. A. Copper, Lake Tin, Straits Lead Spelter Antimony	\$0.05% .06% .01% .01% .01% .05% .05% .05% .13% .21% .21% .10% .05% .05% .05% .05% .05% .05% .05% .0	\$0.07% .11% .07 .11% .06% .05% .44 .90 .23% .24% .05% .24% .05% .14%

The Dutch table given above, together with this American table, shows clearly that there has been no extraordinary advance in values except in breadstuffs, hog products, some kinds of provisions, tin and copper, and that, consequently, the general situation of merchandise is comparatively safe. Should an abundant cereal crop on this side be realized simultaneously with an inferior one in Europe, the current prices of certain articles of food which we produce would, of course, be subject to a notable decline, but the purchasing capacity of the masses would be correspondingly increased, and other merchandise, especially articles used for industrial purposes, would be more extensively consumed. The farmer, on the other hand, would be compensated for the lower price he gets by the greater quantity harvested. At any rate, merchants and manufacturers can congratulate themselves upon the fact that, with the exceptions noted, they are handling merchandise which is not in-flated, and that they are in a safer boat than the Stock Exchange people on either side of the Atlantic.

#### Factors of Safety.

Recent structural failures of bridges, marine engines, boilers, &c., followed by ghastly reports of coroners' inquests in the daily press, and by more or less scientific discuss to their causes in the technical journals, have lately brought the term "factor of safety," prominently before the public.

In the present general acceptation of the term, the factor of safety expresses the ratio between calculated maximum strain and ultimate or breaking strength of the material employed in a given structure. For instance, wrought iron is conventionally assumed to have an ultimate tensile strength of 50,000 pounds per square inch; if the greatest calculated stress upon it, in a given structure, does not exceed 10,000 pounds per square inch of its effective section, the iron is said to be used with a factor of safety of five, or in common parlance, to be "five times as strong as the greatest load that can come upon That this conclusion is an absolute fallacy, is well known to modern engineers, but its pernicious influence is hardly fully appreciated as yet. It gives not only a very undesirable latitude to incompetent designers, but also encourages unscrupulous manufacturers to take large risks, especially under the spur of close competition; it misleads that class of laymen who, either by their official position or as capitalists, are interested in the carrying out of public works; and finally it is to-day the fruitful source of disasters, brought about by unreasonable-one might almost be tempted to say brutal-tests of structures. the structure? And when this brilliant experiment is finished, can anybody tell the possible-and probable-amount of injury done to a previously good and serviceable boiler? All we know is, that "recently inspected" boilers do most unaccountably burst. These tests would never be carried to the excess to which they are but for the fallacious idea of our margins of safety. In the same unreasonable manner are bridges often overtested; loads and shocks are applied to them far in excess of any which the traffic ever can or will bring upon them, and this before an opportunity was given the different parts to assume their working bearings. These excessive strains, while they do not cause immediate failure, do cause, in many cases, permanent and not easily discoverable injury,

whole, at the lowest ebb experienced during the ultimate or breaking strength of mathe year. We have, moreover, divided some terials. This method-employed by the leading articles into two distinct classes, the earliest investigators-consisted in taking one comprising articles of food and the other pieces of constructive materials of any square articles of an exclusively industrial char- unit of section and breaking them by graduacter. The difference in price in articles of ally increasing loads. Bars of iron, steel, food, it will be noticed, was an advance of wood, copper, &c., of given lengths and, let 56 per cent. in the course of two years and a us say, of exactly I square inch of section, quarter, and only 13 per cent. advance in were thus broken, and the average of the loads which caused rupture in the bars of the same material was then fixed upon as Sept. 1, Jan. 1, 1879. 1882. 84.25 \$5.00 the ultimate or breaking strength of that material. It is self-evident that these results do not represent the ultimate or breaking strength of the material, but simply the one load which at a single application will produce rupture. A somewhat lesser load, applied several times in succession, would also have produced rupture, a fact of which everybody is cognizant, and of which we avail ourselves instinctively when endeavoring to break a string or a stick, &c. If not successful in the first application of muscular force, the attempt is repeated until fracture is effected. The muscular force in these successive attempts not being increased, and the first force applied not being equal to the breaking load, shows that a lesser load by sufficient repetition has at least produced rupture. This opens at once the question, What then, is the ultimate strength of materials?

Modern investigations and experiments. conducted with great care, improved testing machines, and covering a wider field of observations than was formerly deemed necessary, have established the following facts, viz.

I. Successive increments of load put upon bars of any constructive material will produce elongation of the bar.

2. These elongations will be proportionate to the loads, and uniform for uniform increments of load up to a certain limit.

3. Within this limit of load the bar, when released from its load, will return to its original length.

4. When this limit is once exceeded and the bar then released, it will not fully recover; a permanent elongation, called "set,"

will be found to have taken place. 5. After permanent set has taken place, the elongations become irregular, greater and greater for equal successive increments of load, and every successive load will also increase the amount of permanent set, until

rupture finally takes place. 6. Any load in excess of the one producing ermanent set will ultimately produce rupture, if sufficiently often repeated. The number of repetitions necessary to produce rupture decrease in proportion to the increase of load, until finally a load is reached

the single application of which produces rupture.4 The point at which permanent set takes place has been designated as the limit of elasticity of the material; but, in fact, the limit of elasticity is not reached at that point at all, but lies invariably very near the broaking point, for after permanent set has taken place successive increments of load, if removed, will still show partial recovery of length in the bar, though with a constantly increasing set, until at last a point is reached where no recovery of length takes placenow elasticity is destroyed or its limit reached-and from that point on a compara-

tively very small force suffices to pull the bar apart. The permanent set is therefore indicative of the point of permanent injury to the material, rather than of its limit of elasticity. Having thus shown that what is at present called the breaking strength is as arbitrarily chosen and as meaningless a quantity as the zero point of a Fahrenheit thermometer, and, therefore, almost worthless when used as the standard to which factors of safety are to be referred, and having further called attention to the fact that the term limit of elasticity is rather a misnomer, it is now proposed to inquire what influence would be exercised upon the prevalent ideas of margins of safety, and consequent methnomenclature expressive of the available strength of material to resist stress. Remembering that any load in excess of

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sufficient repetitions, produce failure, it would seem pretty clearly indicated that Take, for example, our so- the working usefulness of the material is called "hydraulic test" of steam boilers. A limited by the load at which set takes place. perfectly new-or, for that matter, old—
This being the case, we may properly say boiler pumped full of cold water under a that the load under which permanent set pressure far in excess of any steam-pressure it first takes place is the equivalent of the ultiwill ever have to bear! Is there any analogy mate working or safe strength of the mabetween the test and the work required of terial. This safe strength differs in ratio to the so-called breaking strength in different materials, varying in amount from 30 % to 60 % of the latter. For example, in wrought iron it will be found that permanent set takes place at from 25,000 to 28,000 pounds per square inch of section, thus reducing the supposed safety factor about one-half. It is true that this is ample for most cases, and even more than is necessary in some. What, then, may be asked, is gained by the proposed change? If nothing else, the true margin of safety is substituted for a false one, and with this, in many cases perhaps, the temptation removed to speculate, as it were, upon ficti-tious assets. But that this is not the only gain

.\* These phenomena of tensile strength hold good also in a general way in reference to com-pressive, transverse, shearing and torsional resiswhich only becomes apparent through some "unaccountable" failure.

The responsibility for the fallacious conceptions of our margins of safety, or safety and wood, and comprising specimen tests as well

is easy of demonstration. A full appreciation of the true safe strength of the material cannot fail to call out a closer inquiry into the proper functions of safety factors-i. e., what they are intended to cover, and what they were never meant to cover.

There is no denying the fact that even at the present day there is in many minds a vague idea that safety factors are a sort of mechanical charity intended to cover a multitude of sins, both of omission and commission. In this may be found the reason for the deliberate overloading of many bridges designed years ago for the passage of locomotives and rolling stock such as were then in use; but since then the concentrated loads on drivers, weight of rolling stock and traffic have nearly doubled, yet such bridges are left in use to-day without any attempt at properly strengthening them for these increased loads. Nothing but misconception of the true margin of safety is chargeable with this neglect. For the same reason tedious and sometimes difficult calculations of details and connections are often neglected in the first place by designers; "common practice" is blindly followed, without investigation as to whether it is properly applicable to the case in point, and any qualms of conscience are stilled with the answer, "Our factor of safety is sufficient." Manufacturers will use material not in accordance with specifications, and console themselves, and the inspector also, with the assurance that the safety factor is meant to cover just such deficiencies. Add to this the neces sarily more or less imperfect workmanshipfor structures like bridges, engines, boilers. &c., cannot be put together with the nicety to be found in an astronomical instrumentand it will be seen how easy it is to overburden the safe strength. Call it dealing in truisms to repeat here that the weakest point of a structure is the exponent of its strength, vet it will be safe to assert that this old maxim has not been quite as often uttered as it has been overlooked and disregarded.

If full and proper weight is given to the fact that the point of permanent set is the limit of the working capacity of the material, no matter how much more force may be required to produce rupture after that point is passed, and also that within that limit lies perfect safety, it cannot but lead to more rational methods of dimensioning than are at present generally adopted. With it will come a better understanding of the difference in the effects of live and dead loads. and, consequently, methods of dimensioning of the different parts of a structure in accordance not only with the amount of combined dead and live load, but also in accordance with the ratio between the dead and live loads they are meant to resist. This in turn must lead to the avoidance of superfluous weight-always detrimental to any structure—a more careful concentration of material along the line of strains, the better strengthening of details especially connections-proper modifications of shapes and dimensions in those parts particularly subject to shocks, and last, but not least, a proper taking into account of the facilities of the manufacturer, which determine in a large measure the character of workmanship, and ought to influence the adoption of a lesser or greater margin of safety.

Our representative bridge works and ma chine shops have, more or less, for some time past adopted improved methods of proportioning and dimensioning, and are constantly experimenting and improving, but it must on the other hand, be admitted that their number is limited and the amount of work turned out by them small in comparison to the immense production of structural work

going on all over this country.

Factors of safety will always be needed, and therefore will always be provided in construction. But because we cannot, for instance, always provide against the phenomenal effects of hurricanes and tornadoes, this is no reason why perfectly calculable wind-pressures should be left out of consideration and be vaguely saddled upon the safety factor. Imperfections of material, safety factor. Imperfections of material, be upon a contract made or payable in this however carefully selected, inspected and State; hence Eastern merchants selling goods manufactured, will never be fully obviated; to our merchants upon orders sent East to but this is no reason why material known to them at their respective places of business, be flawed should ever be permitted to enter make the contracts where they do business, a structure on the plea that the factor of safety will cover the deficiency. Perfect workmanship is, of course, out of the ques-Perfect tion; but this is no reason for relying upon the safety factor to make up for positive carelessness and negligence in the shop. Let us hope that the near future will eradicate from all our structures bad proportions, bad

The establishment of a mint in New York is a topic once more up for discussion, now that an enlargement of the Mint at Philadelphia is recommended as an absolute necessity. Moreover, a partial reconstruction of the Assay Office in New York is now receiving the attention of the Government architect, the building having been condemned as unsafe. Bullion dealers in Wall demned as unsare. Dunion to access in they were attached by a local creditor, street have long ridiculed the folly of sending all the imported metals to Philadelphia for coinage, the needless expense thus in-

good for mint purposes. The movement in favor of a new mint is in the hands of Congressman Waldo Hutchins. The necessities of the case may be judged from the fact that last year gold was shipped from New York to Philadelphia for coinage to the amount of \$75,716,234.

Some of the chief items of export in our trade with Mexico are manufactures, such as machinery, which increased last last year to \$988,800, against \$365,200 in the year 1880, and the value of other iron goods increased in like proportion, or more than 50 per cent., from \$390,000 in 1880 to \$913,000 total loss. in 1882. The aggregate exports of 1880-81 were \$9,198,077, as against \$6,065,964 in 1879-80. This improvement is quite satisfactory, but the largest possible aggregate does not warrant the glowing portrayal of "the future of Mexico" sometimes indulged by writers for the newspaper press.

#### Shirking Contracts.

To the Editor of The Iron Age: I notice in a recent issue you advert to the unwillingness of manufacturers to book orders on an active market except at "price ruling at date of shipment," because of the tendency of jobbers to shirk contracts when the price declines. "Goods are refused on one pretext or another, as of poor quality, minor defects, &c., that would not have been noticed had the prices held firm."

There is some justice in the accusation, a doubt, and manufacturers have a right to doubt, and manufacturers have a right to protect themselves as best they can, but there is another side to the picture not so often presented. It is the difficulty jobbers have in getting their low-priced contracts and bona fide accepted orders filled when the market has advanced. Then the boot is on the other leg with a vengeance. The jobber who with foresight, or else with confidence who with foresight, or ease with confidence enough to take the risk, laid his plans for an abundance of supplies, is cut off in his en-treaties by terse assurances that it is impos-sible to get the raw material, that the men will not work, that foundations have given way or fly-wheels bursted, that cars are not to be secured or that horses have the pinkeye. These are a few of the excuses he gets in response to feverish letters and imperative telegrams. Meanwhile, he learns of the immense product of the mill and knows that it is being distributed at more profitable figures. He is forced to enter the market and buy at advanced prices to fill orders for his customers taken freely in view of his large, low-priced stock. Finally, just as his high-priced stock coming in promptly enough has satisfied every requirement except that of furnishing a profit, when everybody is pretty well stocked, the season over and the demand of, then his good friends come down with the cheap-bought supplies and notify him generally to the following effect: "Having caught up with our orders, our books cleaned, we are now prepared to execute specifications on receipt of same. Hoping to receive your valued favors, which shall always receive our promptest and most careful attention, we are, &c."

I could sign appropriately several names

I could sign appropriately several names to the above extract, but I fear other Western jobbers might recognize them. Of course there is the remedy at law, if anybody is fond enough of it to take it for a few hundred dollars. The explanation of the trouble complained of on both sides lies in the weakness of human nature. There is a strong disjusting to make lowes or lowed. strong disinclination to make losses or lose profits where either can be avoided. There are some who accept their losses as did the Swiss patriot who drew into his bosom the foreign spears, but there are others whose virtue will not stand the test. JOBBER.

#### Eastern Claims against California Bankrupts.

LOUISVILLE, Feb. 1, 1882

The following letter, sent us for the in-formation of those of our readers who have trade connections in California, will be found

SAN FRANCISCO, January 14, 1882. Mr. C. K. Hawkes, San Francisco, Cal. DEAR SIR: In reply to your inquiry: "Why do Eastern creditors have such difficulty in enforcing their claims in this State, and the remedy," I beg leave to reply:

1. By attachment. To attach property of a

debtor in this State, the creditor's claim must at New York, Boston, Philadelphia, &c., and

cannot attach 2. Our Insolvent Law provides : "An adjudication of insolvency may be made on the petition of five or more creditors residents of this State," whose debts accrued in this State, "provided that they, or either of them, have not become such creditors by assignment within thirty days prior to the filing of the petition." As a result of this from all our structures bad proportions, bad connections, bad workmanship—in short, all that is ascribable to "trust in Providence and—a large factor of safety."

assignment within thirty days prior to the filing of the petition." As a result of this condition of the law, any person or firm doing business here, and being heavily indebted to ereditors residing out of this State, debted to creditors residing out of this State, has but to settle up all its indebtedness to creditors residing in this State, except to any number less than five, and then he or they can cause himself or themselves to be attached by some of the remaining local creditors, and then neglect or refuse to go into voluntary insolvency, and their creditors

creditors, and then neglect or refuse to go into voluntary insolvency, and their creditors outside of the State are perfectly helpless.

This has been demonstrated to the sorrow of Eastern creditors many times within the past two or three years. Of prominent cases I recall: Kennedy & Durr, dry goods, when they were attached by a local creditor.

crockery house, owing, as nearly as we can find out, to San Francisco creditors, about \$40,000, all of which has been attached, and to Eastern creditors upward of \$90,000, did on the day, and within a day or two before, they were attached (Dec. 31, 1881), pay off all their indebtedness in this State except to the said attaching creditors, and now they refuse to go into insolvency, and there are not five resident creditors to put them in; consequently, the attaching creditors will probably collect their claims in full, and the Eastern creditors will make a

Many more cases might be cited, but the above are sufficient; and you will have no difficulty in perceiving from the above statedifficulty in perceiving from the above statement what gross frauds may be, and are, committed. The remedy for this is simple. Most of the large Eastern houses have agents here, and if not, it would pay them well to have. Let such agent sell the goods here, and make the bills payable here, with exchange, and then he could attach when nechange, and then he could attach when hecessary, or take advantage of our insolvent
laws when necessary; and failures would be
less frequent and less disastrous to Eastern
merchants when they happen.

Very respectfully,

JNO. H. DICKINSON.

#### THE IRON AND STEEL CENSUS.

Summary of the 1880 Statistics, by James M. Swank, Special Agent.

(Concluded).

GEOGRAPHICAL DISTRIBUTION OF SPECIAL

The various branches of our iron and steel ndustries have not been equally domesticated in each of the four grand geographical divilargely in the manufacture of steel by the semer process, while New England caunot boast a single Bessemer establishment but has preferred the open-hearth process that New York makes most of the bloom that are made from ore, and Pennsylvania most of the blooms that are made from pig and scrap iron; that Michigan is the leading producer of charcoal pig iron, and now makes no other kind; that West Virginia has developed a remarkably active interes in the manufacture of cut nails; that onl five States make Bessemer steel, and tw States, Pennsylvania and New Jersey, make nearly all of our crucible steel; and that Pennsylvania has made a greater effort than any other State to manufacture all kinds of iron and steel. A glance, however, at leading geographical characteristics is not sufficient to illustrate the wide diversity of the influences which have affected the local development of our iron and steel industries and the following details are therefore added

PIG IRON. Of 3,781,021 tons of pig iron and directastings produced in 1880 in 22 States Pennsylvania made 1,930,311 tons, or 51 pe Pennsylvania made 1,930,311 tons, or 15 per cent.; Ohio, 548,712 tons, or 15 per cent.; New York, 313,368 tons, or 8 per cent.; New Jersey, 157,414 tons, or 4 per cent.; Michigan, 119,586 tons, and Wisconsin, 118,282 tons—each over 3 per cent.; Illinois, 95,468 tons, and Missouri, 95,050 tons—each nearly 3 per cent.; West Virginia, 80,050 tons, or over 2 per cent.; Alabama, 62,336 tons, Maryland, 50,664 tons, and Kentucky, 58,108 tons—each over 1½ per cent.; Tennessee, 47,873 tons, or over 1 per cent.; and

Anthracite pig iron was produced in Pennsylvania, New York, New Jersey, Massachusetts, and Maryland—the last two States producing but little. Pig iron produced with a mixture of anthracite and coke was made in Pennsylvania, 7 per cent.; Georgia, over 1 per cent.; Tennessee about 1 per cent.; and New York and Massachusetts together, less than 1 per cent.

ALL KINDS was made in Pennsylvania, Ohio, West Virginia, Missouri, Tennessee, Kentucky, Indiana, Illinois, Alabama, Georgia, Virginia and Maryland. Charcoal pig iron was made in all of the States that made pig iron in 1880, with the exception of Illinois and New Jersey, which used mineral fuel exclusively.

ROLLED IRON. Of 2,353,248 tons of rolled iron of all kinds produced in twenty-nine States and Territories in 1880, Pennsylvania made 1 071.098 tons, or 46 per cent.; Ohio, 272,094 tons, or tons, or 46 per cent.; Ohio, 272,094 tons, or 12 per cent.; New York, 163,538 tons, or 7 per cent.; Illinois, 117,051 tons, and Massachusetts, 109,252 tons—each 5 per cent.; Indiana, 77,880 tons, or over 3 per cent.; West Virginia, 67,437 tons; New Jersey, 66 cent tons. Kontrolky, 65,202 tons, and 66,030 tons; Kentucky, 65,293 tons, and Wisconsin, 60,653 tons—each a little less than 3 per cent.; Maryland, 47,609 tons, or

nois, 16 per cent.; Ohio, 9 per cent.; Indiana, 8 per cent.; New York, 7 per cent.; Wisconsin, 6 per cent.; Kentucky, 4 per cent.; Kansas and Tennessee, each nearby 3 per cent.; Wyoming Territory, Maryland and Georgia, each about 2 per cent.; California and Massachusetts, each I per cent.; and Colorado, West Virginia and Vermont,

each less than I per cent.
Of the cut nails produced in 1880, Penr they declined to go in voluntarily, and thus divide their assets ratably among their creditors; consequently their Eastern ereditors were powerless, they lost some \$30,000, and the attachment took all their assets. Feist, Frank & Co., a case similar to the above, estimate, at \$1,000,000, or more than enough to provide ground and buildings for a mint took provide ground and buildings for a mint establishment complete, in a location equally their assets ratably among their creditors sylvania made 30 per cent.; West Virginia, were powerless, they lost some \$30,000, and the attachment took all their assets. Feist, Frank & Co., a case similar to the above, about \$300,000. M. H. Fay & Co., paid all local claims but two, were sued and attached.

by those two. Will not go into insolvency. per cent., but Nebraska made more nails Cannot be thrown in, and the Eastern creditions lose all. Altschul, Seller & Co., a large of cut nails made in the United in 1880 was 5,056,600, each keg weighing 100 pounds.

STEEL INGOTS. The following table shows the States which produced Bessemer, open-hearth, and cruci-ble steel ingots in 1880 and quantity in tons:

	Bessemer steel ingots.	Open- hearth steel irgots.	Crucible steel ingots.
Connecticut		******	2,115
Illinois	253,114	925	130
Kentucky		275	75
Massachusetts		2.475	03.1
Missouri	8,400		1000
New Hampshire .		4.521	
New Jersey		450	10,492
New York	84,100		2, 585
Ohio	82,811	24.713	300
ennsylvania	556,314	36,944	60,303
Tennessee		4,700	
Vermont		3,000	
Total	985,203	84.302	76,201
BE	SSEMER STE	EL.	

Of the production of 985,208 tons of Bessemersteel ingots in 1880, Pennsylvania made 56 per cent.; Illinois, 26 per cent.; New York, o per cent.; Ohio, 8 per cent., and Missouri, less than 1 per cent. Of the production of Bessemer steel rails, Pennsylvania made 55 per cent.; Illinois, 27 per cent.; Ohio, 9 per cent.; New York, 8 per cent., and Missouri and Vermont, each less than 1 per cent. The last-named State had, however, no works for the production of Bessemer steel At the close of the census year there were 24 Bessemer converters in the United States, of which 6 were in Illinois, 2 were in Missouri, 2 were in New York, 2 were in Ohio, and 12 were in Pennsylvania.

OPEN-HEARTH STEEL. Of the production of 84,302 tons of open-hearth steel ingots in 1880, Pennsylvania made 44 per cent.; Ohio, 29 per cent.; Massahearth steer ing.

made 44 per cent.; Ohio, 29 per cent.; Massachusetts, 11 per cent.; New Hampshire and Tennessee, each 5 per cent.; Vermont, 4 per cent.; and Illinois, New Jersey and Kentucky, than 1 per cent. Of the open-than average of \$393.51 for the year for each The average daily wages of specific productions.

CRUCIBLE STEEL. ble steel ingots in 1880, Pennsylvania made 60,303 tons, or 79 per cent.; New Jersey, 10,492 tons, or 14 per cent.; New York, 2585 tons, or over 3 per cent.; Connecticut, 2116 tons, or under 3 per cent.; and Ohio, Massachusetts, Illinois and Kentucky, an aggregate of less than 1 per cent. Pennsylvania, New Jersey and Connecticut also unitedly produced 4956 tons of blister steel and miscellaneous steel products, of which Pennsylvania, of "hands and of the pennsylvania". cellaneous steel products, of which Pennsylvania produced 78 per cent.; New Jersey, 20 per cent.; and Connecticut, 2 per cent.

BLOOMS AND BAR IRON FROM ORE. The total production of these products in 1880, nearly all of which, however, was in the form of blooms, was 37,633 tons, of which New York produced 84 per cent.; Missouri, 11 per cent.; Tennessee, 2 per cent.; New Jersey and North Carolina, each over one I per cent.; and Pennsylvania, Georgia and Virginia, an aggregate of less than I per cent. Permsylvania's product was made in a Siemens rotator; that of North Carolina, Georgia, Virginia and Tennessee by the old-fashioned Catalan process; that of Missouri by the Peckham Missouri by the Peckham process; while the more considerable product of New York was almost wholly made in American bloomaries—an improvement on the Catalan forge. The very small quantity of bar iron made from ore in 1880 was all made in Vir-ginia, North Carolina, Georgia and Tennessee bloomaries. It aggregated but little over

1000 tons. BLOOMS FROM PIG AND SCRAP IRON.

States.	Iron rails. Tons.	Bessemer steel railsTons.	Open-hearth steel rails, Ton	Total production of all kinds of rails Tons.
California	6,000			6,000
Colorado	4,500			4.500
Georgia	8,673			8,673
Illinoi	72,802	201,186		273.988
Indiana				
Kansas				
Kent cky				15,000
Maryland				1,250
Massachusetts				5,600
Missouri				5,100
New York				92.175
Ohio				108, 118
Pennsylvania			1,300	569,912
Tennessee			2,745	19.543
Vermont	8,500		3,000	
West Virginia				3.333
Wisconsia				29.552
Wyoming Ter	9,431			9,421
Total	466,917	741.475	9,105	1.217,497

Pennsylvania made 47 per cent. of the total production of rails; Illinois, 23 per cent.; Ohio, 9 per cent.; New York, 8 per cent.; Indiana, 3 per cent.; Wisconsin, 2 per cent.; Kentucky, Tennessee and Kansas. each I per cent., and all other States and Wyoming Territory, each less than I per cent.

United States.	Males above	Males below 16 years.	Females above
Grand total in 1850 Grand total in 1870 Per cent. of inc. 1880 Per cents of dec. 1880	133,202 75,937 77,52	7,709 2,436 216,46	45 82 45.12
United States.	Females below 15 years.	Total hands em- ployed.	Average number of hours of la-bor per week.
Grand total in 1850 Grand total in 1870 Per cent of inc. 1880 Percent. of dec. 1880	21	140,978 77.555 81.78	65
United States.	Av'ge day's wa- ges for a skill- ed mechanic.	Av'ge day's wa- ges for an ordi- nary laborer.	Total am'nt paid in wages,
Grand total in 1886., Grand total in 1870 Per cent. of inc 1880 Per cent. of dec. 1882	\$2.59	\$1.24	\$ 55.476,785 \$ 40,514,981 36.93

HANDS EMPLOYED AND WAGES PAID.

The total number of hands employed in 1880 was 140,07%. Of the whole number, 133,203 were men above 16 years old, and 55 were women above 15 years old, and 55 were women above 15 years old, and 21 were girls below 15 years old. The remarkably small number of 66 women and girls employed in the manufacture of iron and steel in 1880 will not escape notice, and is exceedingly creditable to our American civilization. The comparatively small number of boys employed is also worthy of notice.
The 140,978 persons who were employed in

the year for each perin each of the four grand geographical divisions that have been mentioned, and much less can it be said that they are equally at home in any one of the iron-making States or Territories. While this statement may embody only a self-evident truth, the full significance of the fact stated is deserving of some consideration. A glance at the statistics for 1880 shows that New England now makes but little pig iron, and that the South makes considerable pig iron and scarcely any rolled iron; that the West has embarked largely in the manufacture of steel by the industry in 1880 was wholly confined to the use of the primitive ore bloomary, and that Of the production of 76,201 tons of cruci-ble steel ingots in 1880, Pennsylvania made the labor employed was largely that of colored men. The average wages paid in the four grand divisions were as follows: Eastern states—skilled, \$2.70; unskilled, \$1.21. Southern States—skilled, \$2.09; unskilled, \$1.03. Western States—skilled, \$2.70; unskilled, \$1.31. Pacific States and Territories—skilled, \$3.50; unskilled, \$1.75.

It is necessary to explain that the figures of "hands employed" and "wages paid" refer to the labor directly employed at the various iron and steel works of the country, and in the mining and other operations con-ducted in direct connection with these works. They do not include the labor employed in tions which supply our iron and steel indus-tries with ore and coal and other raw mate-rials. (The statistics of the rials. (The statistics of these operations are being complied by other hands.) Nor do they include any considerable part of the labor employed in the transportation of raw materials from the sources of production to the places of consumption. If the "hands employed" and "wages paid" in these various contributory channels were added to the ous contributory channels were added to the figures given in our tables, the total number of persons directly supported by our iron and steel industries in 1880, and the total amount of wages paid to them, would be largely in-

HOURS OF LABOR.

creased and probably doubled.

The average number of hours of labor required per week in the iron and steel works of the United States in 1880 was 65. This gives a little less than 11 hours for each day of the week. The average is high, in conscquence of the general although not universal practice of operating blast furnaces, 7 days in the week, and in consequence also of the usual practice at blast furnaces, rolling mills and steel works of working 12-hour turns or shifts, which practice may require the presence of the workmen for that length of time. The production of rails of all kinds in 1880 is given in the following table in connection with the States which produced them. The tonnage of rails produced in 1880 was greater than that of any other rolled product, and was about one-third that of pig iron.

ence of the workmen for that length of time, although they may not be, and generally are not, so long actually employed. The State which presents the highest average is Vermont—75 hours, while the lowest average in any of the States is found in Delaware and Kansas—56 hours. A still lower average is found in the District of Columbia—51 hours. Kansas—56 hours. A still lower average is found in the District of Columbia—54 hours.

> Mr. Robeson's bill in regard to a fast mail steamship line, now before Congress, authorizes the Postmaster-General to contract for and establish a weekly mail service between Fort Pond Bay, on Long Island, and Milford Haven, Wales, by means of a line of firstclass steamships, and provides that the vessels shall be iron or steel screw steamships, capable of making at least 18 miles per hour, and shall be wholly of American construction. They shall be allowed to carry passengers and their baggage in addition to the mails, and do an ordinary express business, but shall not engage in any freight traffic. The Government shall have the right, in case of war, to take for the use of the United States any or all of the vessels employed on the line, on paying a reasonable compensa-tion to the owners, not to exceed in any case the original cost of the vessels. The com-pensation for the mail service is graduated as follows: \$12,500 for each outward-bound trip made within 6 days; \$10,000 for each

cent.

LABOR.

In the following table is presented a summary of the hands employed, hours of labor required and wages paid in the iron and steel industries of the United States in 1880, compared as far as possible with like statistics for 1870.

The late William Ballard, whose funeral took place in Brooklyn on the 6th inst., was noted for his interest in many inventions, among which were the Goodyear rubber patent, the printing telegraph, the jack-screw for stowing cotton and tobacco on board of vessels, and others equally important,

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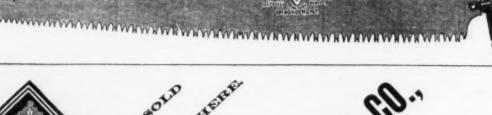
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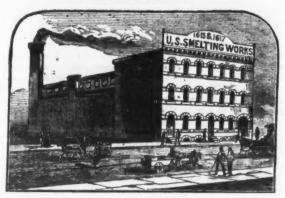


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Chester Rolling Mill Co., Pa.

Neahanneck Iron Co., Pa.

R. H. Coleman, Lebanon, Pa.

Chester Rolling Mill Co., Pa.

Jayenport, Fairbairn & Co., Pa.

Jayenport, Fairbairn & Co., Pa.

Jayenport, Fairbairn & Co., Pa.

Jayenrman Iron, Co., Pa.

Etna Iron Worfs, Ohlo.

Milton Coal and Iron Co., Ohlo.

Milton Coal and Iron Co., Ohlo.

Mose & Marshall, Ohlo.

Mose & Marshall, Ohlo.

Mose & Marshall, Ohlo.

Cloveland Rolling Mill Co., Ohlo.

Mose & Marshall, Ohlo.

Milton Ton and Steel Co., Ill.

Means & Culbertson, Ky.

Ashland Furnace Co., Ky.

Southern States C. L. and S. Co., Tenn.

Sewance Furnace Co., Tenn.

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#### METALLURGICAL NOTES.

DEPOSITION OF METALS.

An improvement in depositing metals by the action of acid in an economical manner and without the aid of electricity, as usually applied in electro-bronzing, has been invented by Messrs. Maltby & Bradford, of Rotherham. The invention consists in immersing the article upon which the metal is to be deposited, for a period of time varying according to the thickness of the deposit required, in a vessel containing a solution of aquafortis (or other suitable acid) and water, in which is also placed and immersed a sufficient quantity (in plates or other suitable form) of the class of metal which is desired to be deposited.

COPPERING AND BRONZING ZINC.

The following recipes for coppering and bronzing zinc are said to produce very good results: Prepare a solution of 15 parts of blue vitriol and one of 19 parts of cyanide of potassium, then mix both solutions together. Incorporate this liquid well with 160 parts of pipe clay, and rub the resulting semi-fluid pipe clay, and rub the resulting semi-fluid mass, by means of a linen rag, on the previously cleaned object. For bronzing, take 15 parts of verdigris, 19 of cream-of-tartar and 30 parts of crystallized soda, reduce them to powder, and dissolve them in the necessary amount of water. Mix this liquid together with 160 parts of pipe clay, and then proceed as above directed. Another process is as follows: Take 15 ounces of blue vitriol, 20 of calcined soda, and mix them well with 32 ounces of glycerine, and mix the paste obtained with 80 ounces of pipe clay. It is then ready to be applied as before stated.

PNEUMATIC CONVERSION IN THE SIEMENS-MARTIN FURNACE.

As an improvement to the Siemens-Martin process, Mr. T. A. Huggett, of Kensington, England, proposes to employ steam to blow the metal while it is in a liquid state in the furnace. He introduces the steam by means of a small iron pipe, connected with a steam boiler by a flexible connection. The end of this pipe he immerses for some inches be neath the surface of the metal, and in an inneath the surface of the metal, and in an inclined direction, so that the steam issuing from the pipe may mechanically promote circulation at the same time that, by its chemical action, it causes a rapid rise of temperature. The advantages which he obtains are a great saving in the amount of time required to bring the metal bath to the time required to bring the metal bath to the state of temperature suitable for running the metal out of the farnace into the ingot molds, a more complete separation of the sulphur and silicon than can otherwise be conveni-ently obtained, and the removal of the silicon ently obtained, and the removal of the silicon when desired at an earlier stage than it otherwise would be, so leaving the steel with a high proportion of carbon, while the separation of the silicon has already been effectually obtained. In order to obtain sound ingots he causes the metal to enter the mold at the bottom, and he closes the top of the ingest road with a loosely fitting castairon. the ingot mold with a loosely-fitting cast-iron stopper. Through the stopper there is a small hole. Instantly when the mold has become full of metal, and when the metal as close up, but not in contact with the under aide of the plug, he admits a stream of water through the hole in the plug directly on to the top of the molten metal in the mold. He allows the water to run until the ingot

WEW METHOD OF SEPARATING OXIDE OF IRON FROM ALUMINA AND TITANIC ACID.

The mixture of oxide of iron, alumina and titanic acid is calcined and weighed, and then dissolved in strong hydrochloric acid. Iron must be reduced to the state of protoxide, and this is best effected by means of a concentrated solution of hyposulphite of soda. A slight excess of this substance may be A slight excess of this substance may be added without inconvenience. The solution thus obtained is neutralized partly by means of ammonia or carbonate of soda and then precipitated by means of a solution of cyanide of potassium, which must be added in slight excess. The whole is then boiled and iron is completely dissolved in the state of ferrocycompletely dissolved in the state of ferrocyanide of potassium. When the floating alumina, or mixture of alumina and titanic
acid, is perfectly colorless, a small quantity
of ammonia is added, as well as a few drops
of sulphide of ammonium. The floating
oxides should remain perfectly colorless and
not assume even the faintest blackish or
greenish tinge, showing that the separation
is absolutely perfect. The whole is then
flored and well weeked and aluming titanic is absolutely perfect. The whole is then filtered and well washed, and alumina, titanic acid, and the almost ever-present phosphoric acid, are separated and estimated by one of the known processes. One of the advantages of the process is the facility with which even minute quantities of titanic acid can be detected and estimated.

#### ROASTING PYRITES.

Chambers for condensing the fumes ob-tained by roasting arsenical and sulphurous pyrites are ordinarily constructed of brick, e roof, which is of considerable thickness, being formed either entirely of brick, or of brick covered with stone. The interior of brick covered with stone. The interior of these chambers is divided by transverse walls into compartments, which communicate each other by means of openings in the said transverse walls, the openings being so arranged relatively to each other as to cause fumes in passing through the chambers to take a zigzag course. Chambers so con structed are objectionable on account of imperfect action, rapid destruction, &c. In order to remedy these and many other defects, Messrs. H. N. Lay and Harry Bulford, of Calstock, England, propose to introduce flues in the transverse walls of the chamber, through which flues currents of air from the exterior of the chamber, which is from the covered with a roof of iron, are passed. By these means the heat absorbed from the fumes is rapidly removed and thrown off from the chamber. In order to protect the iron roof from the action of rain they erect over it a light covering or outer roof of wood, iron, or other suitable material, leaving suffi-cient space between the two roofs to admit of cient space between the two roofs to admit of the free passage of air between them, and the free radiation of heat from the inner or main roof of the chamber. In order to prevent the rapid destruction of the brickwork of the chamber by the expansion and contraction caused by the heating and cooling thereof, the outer walls are braced together by means of bars or rods of iron, which pass through the air fluor in the results of the collision of caustic potash of the collision of the collision of caustic potash or rods of the collision of caused to the collision of caustic potash or rods of the collision of t

forming the walls and the interior of the roof of the chamber entirely of brickwork, a portion of the chamber near the end at which the fumes enter consists partly or entirely of iron. By this construction of the chamber the law mag of the arsenic or part chamber the har ang of the arsenic or part thereof contained in the fumes is prevented, the heat of the fumes being very rapidly low-ered on entering the chamber. Chambers constructed according to this invention are cheaper in first cost than those of the ordinary construction, besides being considerably more efficient and durable.

METHOD OF PURIFYING COPPER CONTAINING ARSENIC

MM. J. J. Laveissière & Son, of Deville, near Rouen, France, in their method of refining copper containing arsenic, employ a crucible lined with a mixture of lime and tar. In order to avoid the rapid destruction of this lining, a so-called "false lining" is introduced, consisting of a mixture of some calcareous substance and peroxide of mancalcareous substance and peroxide of manganese. The ingots of copper to be refined
are introduced, and while they are in a state
of fusion the lining is heated, liberating carbonic acid gas and oxygen. These gases, in
passing through the semi-fluid mass of copper, violently agitate and oxidize it, and
when the copper is in a sufficiently liquid when the copper is in a sumiciently industate the lime and protoxide of manganese also pass through the molten metal, carrying along the greater part of the arsenic acid formed. In order to remove the remaining traces, the copper is remelted, with the addition of basic fluxes, until it is entirely free from impurities. A specimen of copper containing .789 per cent. of arsenic and .32 per cent. of iron was found to contain:

	Arsenic.	Iron.
After the first fusion	.141	.022
After the second fusion	.113	traces
After the third fusion	.023	

This method of refining copper renders calcining unnecessary, and, as will be seen from the table above, gives entirely satisfac tory results.

#### A NEW FURNACE SHIELD.

An invention known as the "Niagara" furnace shield, consists of a sheet of iron in front of the furrace, being hinged upon one side so as to admit of its being readily swung away from the mouth of the furnace while charging or removing a heat. About 6 inches of the upper edge of the shield is made reor the upper edge of the sheld is made re-ceding, and along the top of this recess is secured a perforated tube, connected with a flexible or jointed feeding tube. By this means, jets of water from the pipe placed along at the top are spread over the whole surface of the shield and carried off at the ottom by a trough connected with a waste pipe which conducts the water to the box wherein the workman's tools are cooled. The object of the shield is to protect the workman from the great heat of the furnace. The water, which passess rapidly over the shield, experiences no appreciable change of smead, experiences no appreciate change of temperature, consequently adding no ex-pense for water supply. The shield is ex-tremely simple in construction, inexpensive and not likely to get out of order easily.

EXTRACTING COPPER FROM ITS ORES. In extracting copper from its ores Mr. W.

W. Hughes, of Bayswater, England, uses fur naces like ordinary reverberatory copper ore smelting furnaces, except that they have deep beds suitable to retain a bath of molten matter 10 inches or more in depth. These fur-naces are of large size, and are provided with several tuyeres for blowing air among the contents of the bath. The tuyeres are inclined and are so set as to produce rapid circulation of the contents of the bath; they are also adjustable up and down, so that when at work they may be made to dip more or less into the bath, and may be drawn up to avoid clogging. The ore is first placed in the "desulphurating furnace," in which the crude ore is melted with suitable flux and the sulphur burnt off to some extent; it is then introduced into the accumulating furnace or introduced into the accumulating furnace or roaster, in which the elimination of sulphur is carried further, and is finally allowed to enter the refining furnace, which may be like the refining furnaces already in use and without tuyeres. The "desulphurating furwithout tuyeres. The "desulphurating fur-nace" is placed at a higher level than the accumulating furnace or roaster, and the latter at a higher level than the refining furnace, so that the metal may be run by suitable channels from furnace to furnace. There may be a convenient number of "desulphurating furconvenient number of "desulphurating furnaces," and these may be at different levels, or otherwise, as preferred. A bath of molten material having been prepared in molten material having been molten molten material having been molten mol the tuyeres are set to dip beneath the surface of the fused material. A charge of small of the fused material. A charge of small ore is then dropped gradually into the bath and mixed in both by the rotation or circulation caused by the blast, and also by energetic rabbling or raking, so that the cold material may not fall to the bottom. A large furnace will take in this way a charge of 1½ to 2 tons. When a first charge thus put in is thoroughly melted and the bath is again at a full heat, another charge is added in a similar manner, and so on until the furnace is full. The slags are drawn off or removed from time to time as they form. The desulphurizing furnaces discharge their contents into the accumulating furnace or roaster, which is another furnace of same references. the desulphurizing furnaces, but which does not receive ore. Each desulphurizing furnace when full is about half emptied into the accumulator or roaster, and the former are thus prepared to receive free charges of ore The metal is brought up to a higher standard in the accumulating furnace by the continued operation of the heat and blast, and is after some time run into the refining furnace, where the metal is finished in the usual way.

chamber. By thus bracing the walls the inventors are enabled to build them of less than the ordinary thickness, and the radiation of the heat absorbed by them from the fumes is consequently much facilitated. Instead of mains even after the application of heat. The result is not affected by alkalies, alumina, oxide of zinc, tin or antimony. Large amounts of copper and silver, as well as bismuth, cobalt, nickel or protoxide of iron. however, seriously injure the results. The chemical action which takes place after the addition of permanganate of potassium to the solution of lead and caustic potash may be expressed by the following formula:

5 Pb (N O<sub>2</sub>)<sub>2</sub> + K<sub>2</sub> Mn<sub>2</sub> O<sub>3</sub> + 10 K H O =

5 Pb O<sub>3</sub>, 2 Mn O, K<sub>2</sub> O + 10 K N O<sub>3</sub> + 5 H<sub>2</sub> O.

#### INDUSTRIAL ITEMS.

#### NEW HAMPSHIRE

The Nashua Iron and Steel Company are making an addition to their plant, in the

shape of a new 4-ton hammer. The company do a large business in heavy steel forgings. The White Mountain Freezer Co., of Nashua, are now in full operation in their new and commodious shops, with facilities for turning out 200 freezers per day. Their main shop has a floor capacity of 21,000 square feet, 200 feet of shafting in main line, 40-horse-power steam engine, 60-horse-power boiler for power and heating, &c; boiler house, 100 x 30 feet, with rooms for tinning, galvanizing, blacksmith shop, &c.; also storehouse, 200 x 32 feet, 2 stories; also two dry houses for drying staves for freezer tubs, each of a capacity for drying 30 cords of staves at once. Their shipping facilities are staves at once. Their shipping facilities are first-class, having side tracks to each of their buildings, so that they can either take or deliver freight at any part of shops or storehouse. They occupy over two acres of land. This company were formerly at Laconia, and were burned out last year, with all their stock and tools, so their tools are new and most of them specially designed for new and most of them specially designed for

#### MASSACHUSETTS

The works of the Rodney Hunt Machine Co., at Orange, which were burned on the 24th of last month, will probably be rebuilt. The total loss is not as great as it was at first thought to be, being only about \$50,000, on which, however, there is but \$20,500 insurance. A part of an adjoining mill has been leased by the company, and the machinery will be set up and work carried on there until spring, when the works will be rebuilt. It is possible that a new site may be selected for the works.

The Brayton Petroleum Engine Co. have purchased buildings in East Bridgewater, which have been put in shape and machinery put in for manufacturing their engines. The works run at present by steam, but the com-pany are building one of their engines, of 25 horse-power, which they will use to supply part of their power, and will probably build others to supply it all. The works can at present turn out about twelve engines a

The Deane Steam Pump Co., of Holyoke, are running overtime and employing 125 hands. The large pump supplied by this company for use on the Mississippi River improvefor use on the Mississippi River improve-ments has been tested very severely by the engineers in charge of the improvements,

being run at a speed of 18 strokes more a minute than the contract called for, and has been pronounced highly satisfactory. We hear that the Merrimac Woolen Mills, at Lowell, finding the electric light more costly and less agreeable than gas, have removed their 16 electric lamps. These are removed their 16 electric lamps. These are probably are lights. On the other hand, it may be stated that the Merrimac Cotton Mills are introducing the new Edison incandescent light in their works.

The Taunton Crucible Company, Taunton, have largely increased their capacity during the past year, in order to be able to supply the increasing demand for their black-lead crucibles, orders being on hand which will keep the establishment busy until July. A new annealing kiln was added, and the number of power jiggers was doubled. The in-creasing business of the company is largely due to the success accompanying the use of their crucibles in melting German silver.
We are informed that these crucibles are used to a great extent in the United States Assay Office in New York.

#### CONNECTICUT.

Miller Bros., steel-pen manufacturers, of Meriden, are employing 50 hands.
The large demand for the plain steel watch key manufactured by A. W. Clark, of the Plainsville Watch Trimming Manufactory, has rendered an increase in the working furce and hours necessary.

97, 104, 108 and 114 gross tons. for the week was 679 tons. This This product is very large for a furnace of that size, but at the same time it should be stated that one of Loughlin & Co.'s Eliza Furnace at Pittsand in two consecutive days it made 253 tons. The Red Jacket Furnace and the Eliza Furnace are probably in advance of any other 16-foot furnace in the world.

We learn that the two stacks of the Shenango Furnace, at West Middlesex, are

being torn down, preparatory to erecting a single large stack These furnaces are each 46 x 10, and were built in 1850.

The E. & G. Brooke Iron Company cut at their nail factory, during the month of Jan-uary, 19,112 kegs of nails. The shipments uary, 19,112 kegs of nails. The shipments during the month amounted to about 20,000

The Lucinda anthracite furnace, at Norworthy method of estimating lead in ore is ristown, is for sale, the price asked being given in a recent issue of the Oesterreichische \$36,000. The furnace is in blast at present. traction caused by the heating and cooling thereof, the outer walls are braced together by means of bars or rods of iron, which pass through the air flues in the traverse walls, in order that the said bars or rods may be kept or order that the said bars or rods may be kept or permanganate of the cooling and cooling the latest of the capacity of which was at the utmost the traverse walls, in or oxide of zinc, the solution of permanganate of the Lyman-Haskell cannon for coast and harbor defense, now under youngstown's enterprises. A company has water. After the addition of caustic potash thirty to first or oxide of zinc, the solution is treated with a standard solution of permanganate of Staten Island, and tested there in the pres-

ence of leading Government officials. It will throw a shot weighing 150 pounds, with total charge of 130 pounds of powder, o more than four times the weight of powde used with a shot of the same weight pest guns now in use. As the ball passer the openings to the several pockets the heated gases fire the supplementary charges, increasing the velocity of the projectile to 4000 feet per second when it leaves the muztle of the gun—a velocity sufficient to carry the projectile 12 miles, or to enable it to penetrate 2 feet of wrought iron at a dis-

The relining of Lemont Furnace is completed, and the stack is now undergoing the process of drying out. A new hot blast will be retired. e put up.

The operators of Stanton Colliery have announced that the fire in that colliery has

announced that the fire in that colliery has been extinguished, and that the water would be all out by next week. It will probably take a couple of weeks to put the colliery in proper shape for work.

The Chester Springs Plumbago Company, with a capital of \$50,000, has been organized, and a charter granted by the State government. The company consists of several gentlemen of that section and elsewhere, among whom are J. L. Smith, William Pugh, O. L. Woodward and L. Moses. The propo-Woodward and L. Moses. The propo sition is to begin operations as soon as the weather is favorable. There are buildings weather is favorable. There are buildings suitable for the production of the mineral when put in order owned by the organization. In fact, the company own almost the entire village of Mosesville, with plenty of water and water power. It is claimed that an abundance of plumbago has been developed, so that from the start there will be eash returns.

We are informed that out of the three

We are informed that out of the three blast furnaces owned by the Chestnut Hill Iron Ore Company, Columbia, Lancaster County, furnace No. 1 is at present out of blast; No. 2 was blown in a few weeks ago, after having been entirely rebuilt, and is now doing well; No. 3 is in blast since Sep-tember 26, 1881, giving entire satisfaction. The company have moreover in operation a large rolling mill, a machine shop and a foundry, the quantity of ore (brown hematite) mined per month amounting to about

5000 tons.

The Phosphor-Bronze Smelting Co. (Limited), have recently started into successful operation, in Philadelphia, a rolling and wire mill for the purpose of more completely working phosphor-bronze alloys. They expect in this way to secure greater uniformity in products, besides enabling them to meet the wants of their customers promptly.

wants of their customers promptly.
G. & H. Barnett, of the Black Diamond
File Works, Philadelphia, are about making further and extensive additions to their establishment. Last July they commenced the erection of a two-story building 115 x 30 feet, which for a time relieved them somewhat, but their business has grown so rapidly that they are compelled to make further additions. They have recently purchased six houses on Richmond street and five on Eagle street, covering 220 x 110 feet, adjoining their works, upon which it is their intention to build a two-story addition, part of which is to be used in increasing their factory facilities, the balance for offices and warerooms. ties, the balance for offices and warerooms. They will commence building early in the spring and expect to be in full working order by the 1st of July. They will then be able to employ about 300 hands, which, at present, would not more than meet the demand for their files. During 1881 they used about 400 tons of steel, and could have used more if they had had room. They have also closed contract for a 260 horse-power Couliss encontract for a 260 horse-power Corliss en-gine, which will be ready to start up the new vorks some time about midsummer

#### PITTSBURGH AND VICINITY.

The Oliver Wire Company, manufacturers of plain and galvanized fence, telephone and telegraph wire, are operating their works to full capacity day and night, producing about 60 tons every 24 hours. When they took hold of the works last March the capacity was 15 tons per day. When improvements under way are completed, which will be about March 1, the capacity of the works will be something like 100 tons per day. The company make only steel wire It is reported that the old Glenwood Steel

Works, purchased by Wm. McKinney & Sons, have been transferred to a company of which the McKinneys and Mr. Henry Lloyd, Jr., of H. Lloyd, Son & Co., are members, and that the plant will be put into peration soon.

Graff, Bennett & Co. are receiving con-ignments of structural iron from the Main

PENNSYLVANIA.

According to the Newcastle News, the furnace of the Neshannock Iron Company, locally known as the Red Jacket Furnace, recently produced the largest quantity of pig iron ever produced by a furnace of the same size (60 x 16 ft.). The daily record for one week was as follows: 82, 83, 91, 127, 103, 103 and 114 gross tons. The total The total are using over a million each.

WEST VIRGINIA.

The Standard Nail and Iron Co., of Clifton, have their fifteen additional nail ma-chines in operation. With their mill on chines in operation. With their mill on double time they cut during the month of January 12,196 kegs of nails. There is an active demand for their product. Eighty nail machines are now in operation

in the Laughlin mill, and everything doing well.

OHIO.

The Cuyahoga Works have just finished and started one of their largest size vertical blowing engines at the works of the Calumet Iron and Steel Company, South Chicago, Ill. The air cylinder is 84 inches bore and 54 inches stroke. The whole engine weighs over 80 tons; it will blow up to twelve pounds per square inch if required.

Brown, Bonnell & Co., Youngstown, will add to their works a link and chain depart-

ment

The Powell Tool Company, Cleveland, ax nd tool manufacturers, employ 130 men.
The Eagle Furnace blew in on the 10th on new hearth and inwall, and is working

w. D. Kelly & Sons, of Ironton, are making extensive improvements at the Grant Furnace. It is intended to put in a bell and opper and work the furnace with closed top, thereby utilizing the gases which have so long been allowed to escape. By the addition of a short down-comer these gases will be conveyed to the hot-blast and used. will also add several tuyeres and otherwise improve the furnace.

The Moxahala Furnace, at Moxahala, Perry County, is again in blast after a thor-ough repair and is making 40 tons of iron

per day.

The burning of the Brilliant Glass Works, at Lagrange, Jefferson County, has thrown about 40 men out of employment. The works were built recently, and at the time of the fire were running full. The fire origin-ated in the packing room from an exploded lamp. The loss is estimated at \$30,000, upon which there was \$24,000 insurance. The probabilities are that the works will not

The News-Register furnishes the following figures as the daily production of pig iron in tons in the Mahoning Valley:

Furnace.	Owned by	Tons
Hannah	Mahoning Valley Iron Co	70
Struthers	Struthers Iron Co	80
Andrews	Andrews Bros & Co	100
Phoenix	Brown, Bonnell & Co	65
Falcon	Brown, Bonnell & Co	50
Eagle	Eagle Furnace Co	50
Himrod	Himrod Furnace Co	90
	Briar Hill Iron and Coal Co	100
	Briar Hill Iron and Coal Co	75
Spiegel	Briar Hill Iron and Coal Co	25
Girard	Girard Iron Co	65
Niles	Girard Iron Co	35
Mary	Ohio Iron and Steel Co	40
Total dail	y production	845

The Chapin Bolt and Nut Co., Cleveland, are employing 100 men, and turning out 50,000 bolts and nuts daily.

The Lowry Hardware Co., Cincinnati, is the name of a new organization which was formed on the 23d of January last, the members being William H. Lowry, late secretary and treasurer of the Perin & Gaff Mfg. Co. Edward P. Nearn, late of the same company, and Henry Bode, Jr., late with William A. McCall & Co. They will conduct a whole-sale jobbing business in heavy and light hardware and cutlery. Their offices and warerooms are at 114 West Second street.

At the annual meeting of the New York and Ohio Iron and Steel Company, the following gentlemen were elected directors: Gen. Samuel J. Thomas, of Columbus; Frederick J. Stone, Geo. F. Stone, Frederick A. Brown and Lenox Smith, all of New York. The board then elected Mr. Frederick J. Stone and treasurer of the Perin & Gaff Mfg. Co.

The board then elected Mr. Frederick J. Stone president, and Mr. Lenox Smith, vice-president; Mr. E. McMillan, general manager; vice G. H. Brammell, resigned and Heman L. Field, treasurer. The new directory are organizing for business, and it is thought that before long their mill will be running double turn, and their furnace in full blast.

The Hagerstown Agricultural Implement Manufacturing Company, of Hagerstown, Md., have removed their business to Newark, and have just completed their new brick shops, which cover nearly 7½ acres of ground, into which they have placed a new 150-horse-power Buckeye engine and boilers, and some new machinery. They have a capacity to work 500 men, and have just started up their machinery with 90 hands, and except to work 500 men the work of the work up their machinery with 90 hands, and expect to work 200 more the present season in the building of their specialties, grain rakes, grain drills and the Victor double-huller clover machines, which are in such request that their old works at Hagerstown were not large enough to supply the demand the past few years. The present name of the company is the Newark Machine Company, with a capital of \$200.000. a capital of \$200,000.

#### ILLINOIS.

The Mexican trade of the Smith & O'Leary Steam Hammer Forge Works, of Chicago, is increasing. They have received another order for \$5000 worth of equalizing bars, brake chains and coupling links from a Mexican railroad.

The Springfield Iron Company have pur-chased a large coal mine in Macoupin County,

paying \$60,000 for it.

The Gray Iron Company, of Chicago, have increased their capital stock from \$50,000 to \$100,000, and are making some important additions to their machinery.

The Moline Plow Company are now employing 400 men. They have recently added some valuable machinery to their works. Eaton & Prince, of Chicago, are doing a large business in manufacturing elevators.

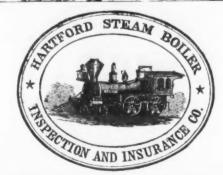
The Collins Plow Company, of Quincy, are making some additions and improvements, preparatory to manufacturing a new line of railroad plows, cultivators and scrapers. INDIANA.

The Perin & Gaff Manufacturing Company recently removed their offices, stock and fixtures from Cincinnati to their works at Jeffersonville, at which place their business

The Atlas Engine Works, Indianapolis, have received the following orders: A com-plete steam outfit, consisting of a 14 x 20 Atlas engine, with a pair of 40 x 18 feet boilers, for the Brooklyn and San Miguel Mining and Reduction Company, to be used in connection with their mines at Columbia, Col.; a 100-horse-power Atlas Corliss engine for a paper mill at Hamilton, Ohio; seven new boilers, 45 inches diameter and 28 feet long, for the Indianapolis Steel Rail Mill; and a 14 x 42 Atlas Corliss engine, together with a pair of boilers, for a new mill in Georgia.

#### TENNESSEE.

During the past year the Roane Iron Com-pany, Rockwood, expended large sums of money in improvements and repairs. A new Weimer engine has been placed in the works at a cost of about \$10,000. Furnace No. 1, the capacity of which was at the utmost



Issues Policies of Insurance after a careful inspection of the Boilers

Boilers, Buildings and Machinery. ARISING FROM

#### STEAM BOILER EXPLOSIONS.

The Business of the Company includes all kinds of STEAM BOILERS. Full information concerning the plan of the Company's operations can be obtained at the COMPANY'S OFFICE, HARTFORD, CONN.,

J. M. ALLEN, Pres. W. B. FRANKLIN, Vice-Pres. J. B. PIERCE, Sec.

Board of Directors: GEN. WM. B. FRANKLIN, Vice Prest Colv's Pat. Fire







HENRY B. NEWHALL, 105 Chambers Street, NEW YORK AGENT.

S. H. & E. Y. MOORE, 163 & 165 Lake Street CHICAGO AGENTS.

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Successors to Milo Peck, Manufacturers of

PECK'S DROP LIFTER is the only one which has its parts cushioned. Being thus cushioned they are the most durable Lifter in

Can be attached to any drop now in use.

Our New Illustrated Catalogue is just out.

Cor. Lloyd and River Sts., New Haven, Conn.



he the only shoe that will not lame an ox, which he can stand up square upon, and will prevent slipping. Six sizes. Liberal dissount to dealers. Manufactured by

SHADBOLT, BOYD & CO., Milwaukee. Wis.

# ELECTRIC



PANY, having perfected their system of Electric Lighting, are prepared to furnish the Improved Gramme Dynamo Electric Machines and Electric Lamps, either for single lights or for from 2 to 20 lights in one circuit.

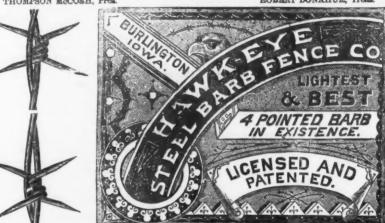
This apparatus is unexcelled for durability, steadiness of light and economy of pow-er, and requires less ascention than any

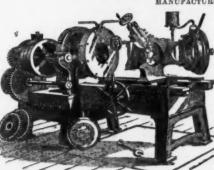
ether. For Price List and further particulars apply to

# The Fuller Electrical Co.,

44 East Fourteenth St., NEW YORK.

ROBERT DONAHUE, Trees





Pipe Cutting & Threading Machines

For Pipe Mill and Steam Fitters' Use.

## TAPPING MACHINES

For Steam Fitting.

Steam & Gas Fitters' Hand Tools.

YONKERS, N. Y.

## HILADELPHIA SCREW CO., Limited,

Twelfth and Buttonwood Streets, PHILADELPHIA.

## IRON & BRASS WOOD SCREWS.

Quality, finish and tests as to strength guaranteed equal to any n the market.

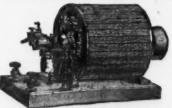
With improved facilities and largely increased capacity for production, we can fill orders promptly, and invite inquiries for discounts. A full line in stock.

#### American Dynamo-Electric Machine For Electro-Plating, Electrotyping, &c.

Requires no Water.

Combining

all the



Latest Improvements. Cannot Reverse Current.

THE ZUCKER & LEVETT CHEMICAL CO., Gen. Agents, Manufacturers and Importers of NICKEL PLATERS' SUPPLIES.

540, 542, 544 & 546 WEST 16TH STREET, N. Y.



Cuyahoga Falls, Ohio.

Tinned **Belt Rivets** Burrs a Specialty.

Alford, Ward, Davenport & Co., 85 Chambers St., New York.

V. G. HUNDLEY,

HUNDLEY & HANKS,

PROPRIETOR OF NORTH CAROLINA HANDLE CO.,



Handles and Spokes NEW YORK. 19 Reade Street and 97 Chambers Street,

JARDWARE COMMISSION MERCHANT.

# B. F. Mercer,

**Wood Pumps** Plain and Porcelain Lined,

STOCK WELLS, HOUSE WELLS & CISTERNS.

Send for Price List.

B. F. Mercer,

Alliance, O. KEYSTONE RIVETING FORGE



An Improved Pattern. Cheap and Burable. BEST IN THE MARKET.

KEYSTONE PORTABLE FORGE CO.,

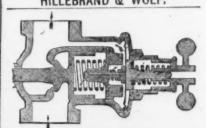
Door Springs, Pad Locks,
Dead Latches,

Trunk Stays,
Keys, &c., &c.

110 South 8th St., and Sansom, bet. 8th and 9th, PHILADELPHIA. PATENTED



HILLEBRAND & WOLF.



Curtis Pressure Regulator. CURTIS REGULATOR CO., 59 Beverly Street, BOSTON, MASS.



### Grant Fan Mill & Cradle Co.

Grant's Grain, Coffee, Rice, Cochineal and Pimento Fans,



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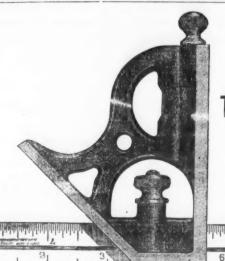
GEO. M. EDDY & CO., Manufacturers of

Measuring Tapes Of Cotton, Linen & Steel.

ALL PURPOSES. 351 to 353 Classon Ave. Brooklyn, N.Y.

FOR SALE,

At New England Machinery Depot, 308 North Third St., Philadelphia, Pa. Horizontal, Vertical and Leconstive Tubular Boller, from 2 to 50 H. P., in stock and larger to order. Engines all sizes. Pumps, Heaters, Injectors, steam and hand Brief and Mortar Holsts. Boller Test Pumps. The new Gravity Coffee Roaster. All of the above constantly kept in steek. Send for circular and price lies.



CHAPLIN'S PATENT

TRY SQUARE AND MITRE, SPIRIT LEVEL AND PLUMB.

And the state of t 

CENTER SQUARE

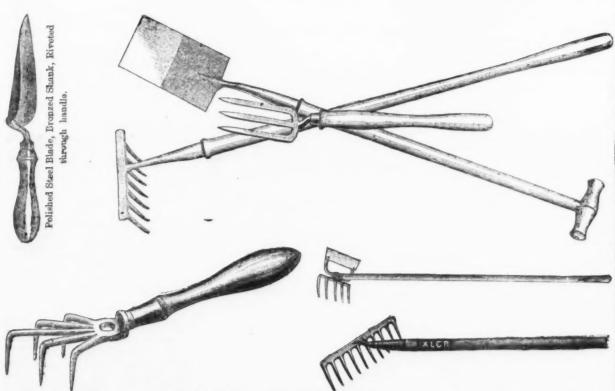
DRAUGHTSMAN'S T-SQUARE.



ATHOL, MASS.

Sole Manufacturers and Owners of the Patent.

Circular, with Price List and Discounts, on Application.



The above illustrated Garden Tools are a few of the goods we make. Having new Factory, new Designs, new Patterns and new Outfit, we feel justified in asking the trade to remember us in placing orders.

LESTER & LYMAN MANUF'NG CO., Millers Falls, Mass. GRAHAM & HAINES, General Agents, 113 Chambers St., New York.

LOW MOOR IRON COMPANY, Alleghany Co., Virginia.

Best Foundry Iron for Sale in Lots to Suit. GEO. H. WHIPPLE, 56 Wall St., New York.

ANALYSIS OF LOW MOOR IRON:

Fraphite Carbon 3.	402
Combined Carbon	213
Silicon 2.	692
Sulphur No	ne.
Phosphorus	559
Calcium	
fanganese Tra	co.
ron, Nitrogen, Oxygen, Hydrogen and loss by difference	003
100.	
mount of pure metallic iron found 92.	540

DETROIT STAMPING CO.,
DETROIT, MICH.

BRASS, BRONZE, COPPER,
A.G. BROOKS & W.NEBRENER,
261 N. 3d Street, - Philadelphia.
Also, on band,
Also,



The Curtis Stove Works, of St. Louis, will start up again shortly. They have been idle for some weeks, undergoing repairs.

The new Rock Spring Works of the Missouri Stove Foundry Company will soon be ready to start up.

be ready to start up.

The Groom Shovel Company have been

idle but two days in the past two years.

Our Production of Bessemer Steel in 1881.

The Bulletin of the Iron and Steel Associ-

tion says:

We have received complete statistical reports from all the Bessemer steel works in the United States, giving their production of ingots and rails in 1881. The total quantity of Bessemer steel ingots produced in the United States in 1881 was 1,539,157 not tons, or 1,374,247 gross tons. The production in 1880 was 1,203,173 net tons; in 1879, 928,-972 net tons; in 1873, 732,226 net tons. The increased production of 1881 over 1880 was 335,084 net tons, or 28 per cent.; over 1870 335,984 net tons, or 28 per cent.; over 1879 it was 610,185 net tons, or 66 per cent., and over 1878 it was 806,931 net tons, or 110 per cent. The production of Bessemer steel ingots in this country in the ten years from 1872 to 1881 has been as follows, in net tons:

Years.	Net tons.		Net tons.
1872	120,108		560,587
1873	170,652	1878	732,225
1874	891,933		928,972
1875	375.517		1,203,173
1876	525,096	I881	1.539.157

Bessemer steel ingots were produced in 1881 by 13 works, of which 7 are in Pennsylvania. Two new works, both in Pennsylvania, produced Bessemer steel in 1881 for the first time. These works are those of the Pittsburgh Bessemer Steel Company, Limited, located at Homestead, near Pittsburgh having two converters and the Limited, located at Homestead, near Fitts-burgh, having two converters, and the Pittsburgh Steel Casting Company, of Pitts-burgh, having but one converter. The Pitts-bugh Bessemer Steel Company, Limited, made its first blow on March 19, 1881, and the Pittsburgh Steel Casting Company made its first blow on August 26, 1881. Some exten-sions were made to the old works in 1881, and two new works are in course of erection. and two new works are in course of erection now. A comprehensive exhibit of the Bes-semer steel works of the country completed and in progress is as follows:

	Conve	rters.	
Names of Companies.	Completed.	Building	
Albany and Rensselaer Iron and Steel Co., Troy Bethlehem Iron Co., Beth-	two 6%-ton		
lehem	four 7-ton		
Pennsylvania Steel Co., )	two 61/2-ton		
Steelton	three 8-ton	*********	
Lackawanna Iron and Coal			
Co., Seranton	two 7%-ton		
		1	
town	two 6-ton	********	
Carnegie Bres. & Co., Lim-			
ited, Bessemer	three 10-ton	********	
Pittsburgh Bessemer Steel			
Co., Limited, Homestead.	two 4-ton	******	
Pittsburgh Steel Casting Co.,			
Pittaburgh	one 7-ton		
Cleveland Rolling Mill Co.,			
Cleveland	two 6%-ton		
North Chicago Rolling Mill			
Co., Chicago	two 614-ton	two re-t'n	
Union Iron and Steel Co.,			
Chicago	two 51/4-ton		
Joliet Steel Co., Joliet	two 51/4-ton		
Vulcan Steel Co., St. Louis.			
Scranton Steel Co., Scranton			
Colorado Coal and Iron Co.,			
South Pueblo		two 5-ton	

year, as quite a large quantity, estimated in the neighborhood of 100,000 gross tons, was rolled by iron rail mills from imported blooms. The total production of Bessemer steel rails in 1831 was therefore about 1,200,-000 gross tons, as we some time ago estimated it would be, but the exact figures cannot be given until we receive full statis-

Years.	Net tons.		Net tons
1873			
1873	129,015	1878	. 550,39
1874			
1875	290,863	1880	954,46

repairs. It is being relined from bottom to top. Mr. Shetow, the superintendent, states that when No. 2 is completed, sixty-five tons per day can safely be counted on, with no bad luck, and if the facilities for filling the furnaces are sufficient. These will have no doubt to undergo a change, as the present arrangements are not of a greater capacity than to furnish material for seventy-five or eighty tons of metal per day, and with the two in blast the output will not be less, from the outlook, than 110 to 125 tons every twenty-four hours.

MISSOURI.

The Curtis Stove Works, of St. Louis, will start up again shortly. They have been idle

#### WASHINGTON NOTES.

WASHINGTON, D. C., Feb. 7, 1882. The House Committee on Ways and Means to-day reported a bill providing for the appointment of a commission to investigate the question of the tariff. The vote was taken after a warm discussion, and in the result reached indicates a radical departure from the principles of the Morrill Tariff Commission, to which the sub-committee had desion, to which the sub-committee had devoted earnest attention. The vote on its adoption stood as follows: Yeas—Messrs. Kassen, McKinley, Hubbell, Haskell, Errett, Randall, Speer and Kelley (chairman)—8. Nays—Messrs. Dunnell, Russell, Tucker, Carlisle and Morrison—5. The opposition of the last three gentlemen named to the Morrill hill as stated some weeks are was been rill bill, as stated some weeks ago, was be-cause it included the consideration by the commission of the internal revenue laws, as well as the tariff. The following is the text

A BILL to provide for the appointment of a commission to investigate the question of

the tariff:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That a commission is hereby created, to be called the "Tariff Commission," to consist of nine members.

Sec. 2. That the President of the United States shall, by and with the advice and consent of the Senate, appoint nine commissioners from civil life, one of whom—the first-named—shall be the president of the commission The commissioners shall receive, as compensation for their services, each at the rate of sation for their services, each at the rate of \$10 per day when engaged in active duty, and actual traveling and other necessary expenses. The commission shall have power to employ a stenographer and a messenger, and

employ a stenographer and a messenger, and the foregoing compensation and expenses to be audited and paid by the Secretary of the Treasury out of any moneys in the Treasury not otherwise appropriated.

Sec. 3. That it shall be the duty of said commission to take into consideration and to thoroughly investigate all the various questions relating to the agricultural, commercial, mercantile, manufacturing, mining and industrial interests of the United States, so far as the same may be necessary to the industrial interests of the United States, so far as the same may be necessary to the establishment of a judicious tariff, or a revision of the existing tariff laws upon a scale of justice to all interests, and for the purpose of fully examining the matters which may come before it. Said commission, in the prosecution of its inquiries, is empowered to visit such different portions and sections of the country as it may deem advisable.

and sections of the country as it may deem advisable.

Sec. 4. That the commission shall make to Congress a final report of the results of their investigation, and the testimony taken in the course of the same, not later than the first Monday of December, 1882, and they shall cause the testimony taken to be printed from time to time and distributed to Members of Congress by the Public Printer and shall of Congress by the Public Printer, and shall also cause to be printed, for the use of Con-gress, 2000 copies of their final report, together with the testimony.

A member of the Ways and Means Com-

delay, &c., was read and laid on the table until the next regular meeting. The Committee on Transit recommended the circulating system of transit over the bridge, the cars being propelled by an endless wire rope. The total cost would be about \$500,000. The statement of the financial condition of affairs to the syst of Lungary 1882 shows that cannot be given until we receive full statistical reports from the iron rail mills of the country. The following table shows the growth of our production of Bessemer steel rails in the ten years since 1872, the qualifying statement in regard to 1881 being borne in mind:

Years. Net tons. Years. Net tons.

Years. Net tons. 1872. 94.070 1873. 139.015 1874. 94.1670. 681.064 1875. 290.862 1886. 954.460 1876. 1365. 1

#### Special Notices.

## WE DESIRE TO LOCATE Agricultural Works,

Just starting, in some well situated Western town willing to give liberal cash bonus to a con eern that will be allve and growing. Address

MANUFACTURING CO.,

Office of The Iron Age, 83 Reade St., New York. Bolt and Nut Machinery, &c., for Sale. One-Reader, Lewis Oliver & Phillips, secondand. Two-Header Burdick Forged Headers, second-

Two-Header Lowell Forged Headers, second-

Two-Header Lowell Forged Headers, secondhand.
One Cold Upsetter or Header, Chapin make,
second-hand. Will head 6-in. long by ½ open dies.
Two Key-Seat Cutters, most improved style,
second-hand.
One Double-Punch and Shears. Allstatter No. 7,
second-hand.
One Thorn & De Haven Drill, second-hand.
One Double-Bolt Cutter, Smith maker, little used.
Also our full line of National Machinery Co.'s
manufactures: Hot-pressed and Hot-forged Nut
Machines; Bolt Cutters, National Head, 8 sizes;
Double-Bolt Cutters, Tappers, Headers, Washers.
Rivet, Track Bolt, Pointers. Burrers, and full outfits for Bolt and Nut manufacturers. Address
NATIONAL MACHINERY CO., Cleveland, Ohio,
the only Specialists in the United States.

#### DESIRABLE MANUFACTURING SITE For Sale or Rent.

Being the extensive property formerly occupied by the BUFFALO IRON AND NAIL WORKS AT BLACK ROCK, IN THIS CITY.

ROCK, IN THIS CITY.

The buildings cover over three acres, and are of brick and wood, substantially constructed, and with slate roofs. They could easily be changed, if necessary, te suit almost any kind of business.

Water and railroad communication to all parts of the country.

Maps of the property, with full description, sent en application.

P. P. PRATT or F. L. PRATT, Buffalo, N. Y.

### Cold Press Nut Punch,

Nearly new, graded 10 to 1, with adjustable side gear, so to 1, three speed, large and small nuts; weight, 240,000 pounds.

SHIMER & CO., 950 South 3d St., Philadelphia.

A Philadelphia Tin Plate & Metal House

desires the services of a thoroughly competent sraveling Salesman. None other need apply. POST OFFICE BOX 1698, Address

stating age, references and territory best ac-

#### For Sale.

One Beam Engine, 25 x 48, in first-class condi-tion in every respect, patent cut-off, Shive gover-nor, exhaust pipe heater, 18-feet fly wheel, &c., all complete. Price \$1200; easy terms. SHIMER & CO.

250 South 3d st., Philadelphia.

## FOR SALE.—MINE CARS.

Fifty Mine Cars for 1 ft. 6 in. track; are end dumps of most approved pattern, strongly built, and fitted with the Thomas self-oiling chilled wheel, capacity about 1% tons. Will be sold cheap. JAMES E. THOMAS, Newark, Ohio

#### For Sale.

On reasonable terms, a first-class Iron and Brass Foundry, with full equipment for making light and heavy castings of all kinds; powerful cranes, cupolas, ovens, &c., with a heavy stock of patterns. Located in Philadelphia, Pa. Apply to WM. ERNST.

727 Walnut St., Philadelphia, Pa.

#### For Sale.

Edge Tool and Ax Manufactory, established thirty years, doing a business yearly from three to five times capital required. Located in a thriving Western city, with valuable local trade. Address for particulars. EDGE TOOLS, Office of The Iron Age, 83 Reade St., New York.

#### To Let.

Office Room to set on ground floor, 110 Chambers Street.

WALTER C. HARLOW.

#### FORGINGS.

A practical man, having some capital to invest, would like to hear from parties who are desirous of establishing the Forging Business in their neighborhood. State location, chances for business and inducements that can be offered to W. H. N. & CO., New York, Parks St. Parks 28, New York, New Yor Office of The Iron Age, 83 Reade St., New York.

#### Wanted.

A live man to assist the proprietor in a general line of Wholesale and Retail Hardware and Agricultural Implement business. Must be a good bookkeeper and financier, and have some experience in the business. First-class references required. A single, middle aged man preferred. Parties expecting a big salary need not answer this Address.

ASSISTANT.

Office of The Iron Age, 83 Reade st., New York.

WANTED AT ONCE.—An experienced Mechanical Draftsman, one accustomed to Blast Furnace, Holling Mill Work and general machinery. Address, stating salary required and references, PERCY B. BEVERLEY,
Supt. Lynchburg Iron Co., Lynchburg, Va.

WANTED.—By a young man with four years' experience in shelf and heavy Hardware, a position as stockkeeper, salesman or bookkeeper, or would sell goods on the road. East preferred. Address. H. J. F. Office of The Iron Age, 83 Reade St., New York.

#### Special Notices.

#### For Sale.

## THE LUCINDA FURNACE.

Norristown, Pa.

Anthracite Blast Furnace, with modern im provements; three Hot Blast Stoves, Vertical Hoist, ample Engine and Boiler Power; size 13 x 40 feet; capacity, 150 tons per week. Will be sold in blast and in perfect working order. Stock can be received by the Philadelphia and Reading Railroad, or Schuylkill Canal, and the new branch of the Pennsylvania Railroad, as surveyed, passed within one square of furnace. Price \$36,000. E. M. VALENTINE.

265 South 4th Street, Philadelphia.

for Forks. Shovels and Spades in large quantities and of good quality, for home trade or export. ALLEN & NIXON.

32 Maiden Lane, New York.

#### German Silver Workers.

Wanted, a Foreman to take charge of shops making German silver forks and spoons. Must be temperate, reliable and thoroughly competent to take charge of whole work. Situation permanent and desirable. Address, with full particulars of experience and salary desired, GERMAN SILVER, Office of The Iron Age, 83 Reade st., New York.

## BLACKSMITHS' FORGES

(PATTERSON'S PATENT).

Portable or stationary, superior to stone or brick. Can be used with bellows or fan. Send for infor-mation to the FORGE COMPANY,

#### Brooklyn, E. D., N. Y. **Proposals for Construction**

Iron Market Hall.

By order of the Government of the Province Pará, in the Empire of Brazil, it is made publ that in this Consulate General proposals will be reserved till March 2, 1883, for the construction of an Iron Market Hall in the Capital of said Province. Any Parties desiring information in regard to such proposals can apply to the same Consulate, No. 42 Broadway, where printed specifications will be furnished and the plans of the projected build-ing can be invested.

ing can be inspected.

New York, Jan. 20, 189s.

SALVADOR DE MENDONCA.

Brazilian Consul General in the United States.

#### To Manufacturers.

An enterprising business man, going every year to Europe, wishes to sell American Hardware suitable for that market on commission. Can give first-class references. Address F. L. COMMISSION,

Office of The Iron Age, 83 Reade St., New York. THE NEW ENGLAND

Manufacturers & Mechanics' Institute will hold their Second Annual Exhibition at Boston, in their specially constructed Exhibition Bulleting, the largest in the United States, during SEP/EMBER AND OCTOBER, 1882. Exhibitors invited from the whole world. Blank forms of applications for space sent upon application to JOHN F. WOOD, Treasurer, 38 Hawley Street, Boston, Mass.

A Rare Chance for a Manufacturer. To lease for a term of years, at Milton-on-the-Hudson, a good Water-Fower, with Buildings, which have been used as a Foundry and Machine Shop very successfully. Five minutes from the steambat landing. Address JOHN B. BALL. Milton, Ulster Co., M. Y., or HENRY DICKINSON, 243 Broadway, New York.

## Wanted.—Rolling Mill Machinery.

1 SET 10 IN., 3-HIGH ROLLS. 1 SET 12 IN., 3-HIGH ROLLS.

Furnaces, Boilers, Engine, second-hand, good

#### SHELDON & CO., Auburn, N. Y. Wanted.

TRAVELING SALESMEN (who have the liberty to carry other goods) to represent a line of Specialties for the Hardware, Upholstery and Picture-frame trade, on which a good commission can be made. The goods are manufactured by an old and responsible company. All communications will be strictly confidential.

Address

Address SPECIALTIES,
Office of The Iron Age, 83 Reade St., New York.

WANTED.—Party having been engaged in other business for a year wishes a position in first-class concern making House Furnishing or Builders' Hardware, to travel South preferred; am well acquainted through Southern States, and with manufacturing here; when last in this business was buyer for large city jobbing house, to whom I can refer. Address HARDWARE, care Gullman & Co., New York City.

WANTED.—A Roller for nine-inch mill and ivo Heaters. None but strictly temperate men need apply. References as to ability and habits required. Liberal pay guaranteed. Address. SYRACUSE IRON WORKS, Syracuse, N. Y.

WANTED.—A young man wants a situation as Clerk in a first-class Hardware house. Ten years' experience in the general hardware busi-ness. Best of references Address P. O. BOX 95, Lykens, Pa.

#### Situation Wanted.

#### Special Notices,

### The Sherman Process Co.

9 Pemberton Square, Boston, Mass., Issue Licenses to use the Process for the Manufacture of Iron and Steel

In the Bessemer Converter, Crucible Siemens Martin, Puddling, Blast and Cupola Furnaces. The use of this Process improves the quality the product, saves fuel and labor, and does not quire any change in furnace or manner of working See page 17 of The Iron Aac of Oct. 25th, 1877.

#### To Railroads, Mill Owners and Contractors.

#### STRUCTURAL IRON WORK FOR SALE.

Having purchased the Ironwork of the Main Centennial Bullding, situated in Fairmount Park, Philadelphia, we now offer the same in sections to suit purchasers. These buildings can be sold in widths varying from 100 to 163 feet, and of any hight, from 40 feet down to 25 feet, and in length from 100 to 700 feet. We have eight Spiral Stairways, in all over 800 steps.

Plans showing how all parts of these buildings may be utilized in railroad depots, &c., have been prepared by Messrs. Wilson Bros. & Ce., of Philadelphia, civil engineers and architects, and can be seen at the office of Mackintosh, Hemphili & Co., limited, Fort Pitt Foundry, Pittsburgh, Pa., or at the office of the company, at Centennial Building, West Philadelphia.

Wishing to dispose of the above quickly, we are rrepared to offer great inducements to purchasers, both as to low price of material and promptness of delivery. Any communications addressed to the CENTENNIAL STRUCTURAL CO., care of Mackintosh, Hemphill & Co., Limited, will receive prompt attention.

#### Copartnership Dissolution.

NOTICE is hereby given that by the death of the unitor partner. Mr. Nathan Anthony, the firm of BRADFORD & ANTHONY is this day dissolved.

The affairs of the firm will be settled by the under signed, the sole surviving partner.

MARTIN I. BRADFORD. Boston, June 12, 1881.

All communications in regard to the affairs of the late firm should be addressed to HRADFORD & ANTHONY, Boston, Mass.

MARTIN L. BRADFORD hereby gives notice that se will continue his business under the name of BRADFORD & ANTHONY."

The estate of the late Nathan Anthon a to be in no value interested in the future business, whether con increal under the name of Bradford & Anthony or

therwise.
All business communications abould be addressed to
BRADFORD & ANTHONY
374 Washington St. Boston,
Importers, Manufacturers' Agents and Dealers in
Cutlery, Fishing Tackle, Sance.
See advertisement first issue each mouth.

#### STEEL RAILS. IRON RAILS.

THE SPRINGFIELD IRON COMPANY

are open for orders for IRON AND STEEL RAILS for prompt delivery

Apply to the Company at Springfield, Illinois

JAMES JOHNSTON, Agent,

#### 30 Pine Street, New York. Wholesale Hardware.

Parties wishing to invest in Wholesale Hardware Parties wishing to invest in Wholesale Hardware business in a Western city, please address A. E. K. & Co., Office of The Iron Age. 83 Reade St., New York. Special inducements offered.

#### Wanted.

A first-class Furnaceman to act as founder at a coke furnace, 16 feet in bosh, with all modern improvements. No one except a thorough practical man need apply. Must have best of references. Good salary would be paid to the right man. Address,

Care S. B. Lows, Chattanooga, Tenn.

### Wanted.

An old boiler shell, suitable to construct into a foundry cupola; diameter not less than 45 inches or over 47 inches; length not less than 20 feet or over 40 feet. Name cash price, f. o. b. cars.

Address HEEBNER & SONS,
Lansda 0, Penn.

# Wanted Immediately.

wages. Address
POPE IRON AND METAL CO.
St. Louis, Mo.

#### Wanted.

A soft-coal burning, Consolidated or Tank Locomotive of about 15 tons, six-wheeled, coupled with pony truck; tank capacity, 1 ton of coal and 1000 gails, water; dia. of cylinders, 15 x 16 in., or thereby; driving wheels 36 in. dia., closely coupled with trailing wheels behind furuace. Weight distributed as follows: Truck, 2% tons; tank, 2% tons; driving wheels, 20 tons. Straight boiler preferred. Address-WALDENS RIDGE RAILROAD CO., Jenks P. O., Roane Co., Tenn.

A YOUNG MAN with fourteen years' experience in office work as assistant bookkeeper, salesman and confidential clerk, desires a position of trust and responsibility. Willing to travel. Satisfactory references. Address W., Box 43, Y. Office of The Iron Age, 53 Reade St., N. Turner, Expe

W ANTED.—Situation as Roll Turner. Experienced on all kinds of shaped and bar iron Best References. Address ROLL TURNER,

Office of The Iron Age, 220 S. 4th St., Phila., Pa.

A THOROUGHLY EXPERIENCED SALES
A MAN, fully acquainted with Pig and Manufactured Iron trade, also practical mechanical knowledge of Pumps. Engines and Machinery, with extensive acquaintance with best trade in Middle and Western States, is open for engagement with first-class Commission or Manufacturing House, on good salary or paying commissions. Address, with name and particulars, "EXPERIENCE," Box 60,

Office of The Iron Age, 32 Reade St., New York.

WANTED—Employment in the Hardware trade

#### Special Notices.

Second-Hand and New Machinery.

The following Tools ready for delivery at an The following Tools ready for delivery at early date;
Two Lathes, 15 in. x 6 ft. New.
Three 30-in. Upright Back-Geared Drills. New.
Four 22-in. Upright Back-Geared Drills. New.
One 20-in. Upright Back-Geared Drill. New.
One 16-in. Upright Back-Geared Drill. New.
One 17 in. x 5 ft. Lathe. New.
One 17 in. x 5 ft. Foot Lathe. New.

One 11 in. x 5 ft. Eathe. New.

IN STORE.

Three Lathes, 12 in. x 12 ft. New.
Four Lathes, 12 in. x 2 ft. New.
One Lathes, 15 in. x 5 ft. New.
One Lathes, 15 in. x 5 ft. Wood & Light.
One Lathes, 16 in. x 6 ft. Wood & Light.
One Planer, 70 in. x 1 ft.
One Planer, 10 in. x 1 ft.
One Planer, 10 in. x 1 ft.
One Planer, 10 in. x 8 ft.
One Crank Planer, 12 in. stroke.
One Milling Machine. No. 4. Wood & Light.
One large Index Milling Machine.
One No. 12 Bolt Cutter. New.
One Knowles Pump, No. 7.
One Cameron Pump, No. 2.
One 100-ton Hydraulic Press and Pump.
One Peck, Stow & Wilcox Foot Press.
One 16 in. Daniels Planing Machine.
One pair Paper Rolls.
One pipe Cutting Machine.
One pair Paper Rolls.
One pipe Cutting Machine.
ENGINES AND BOILERS.

ENGINES AND BOILERS. One Horisontal Engine, 9 in. x 16 in. New.
One Corliss Beam Condensing Engine, 500 H. P.
One Portable Engine, 8 in. x 10 in.
One Horisontal Engine, 6 in. x 12 in.
One Horisontal Engine, 3 in. x 16 in.
Two Hor. Tub. Boilers, 4/2 x 13/5, 43 4-in. tubes.
One Hor. Tub. Boiler, 4 x 13, 34 4-in. tubes.
One Locomotive Steel Boiler, 25 h. p.
One Roote Engine.
Shafting, Pulleys, Hangers, &c.

J. Gray's Machinery Depot, 27 Dey St., N. Y

### For Sale.

The Little Schuylkill Rolling Mill, at Milldale, Schuylkill County, Pa., near Port Clinton, on the line of the Philadelphia and Reading Railroad, consisting of a Merchant Bar Mill in complete running order, with a splendid water power sufficient to run the mill two-thirds of the year. Engines, Boilers, Foundry and Machine Shop, with Lathe for turning rolls, and all other appurtenances necessary to commence operation at once. Together with dwellings, stables and at once. large tract of land, to be sold low if applied for J. O. RICHARDSON,

No. 232 Dock street, Philadelphia. For Sale.

# Palo Alto Rolling Mills,

Near Pottsville, Pa., On the Main Line of the Pottsville and

Reading Railroad. These mills are in good repair, and can be started in two days' time.
Rolls for T-Rails 12 to 70 lbs. per yard, and for Street Rails 18 to 70 lbs. per yard.
Guide Mill Train for Merchant Iron 14 to 1 inch.
Rolls for Merchant Bar, round and square, up to

Moils for merchant that, totale 4, 4, inches.

Number of Puddling Furnaces in both mills, 30;
Heating Furnaces, 9; all with boilers attached.

Also, Foundry, Machine Shop, Blacksmith Shops, Iron House, Roll House, Carpenter and Pattern Shops, Stables, Handsome Dwelling for superintendent, 11 Tenement Houses, a Brick Office, and ample grounds for stock and cinder.

For further particulars address

Messrs. LEE & McCAMANT, Extrs.,

Pottsville, Pa. THOS. F. WRIGHT, 1804 Race st., Philadelphia, Pa. HUGH W. ADAMS, 56 Pine st., New York.

### For Sale.

Stock of hardware, stoves and implements, and store furniture, in one of the best towns in Kansas

HARDWARE. Box 366, Salina, Kansas

### Blast Furnace For Sale.

One of the very best properties in the state o Pennsylvania, including farm of 125 acres, con-siderable portion of which is Ore Land. Cap acity, 275 tons Pig Iron per week. For full par-ticulars apply to

J. O. RICHARDSON, No. 232 Dock St., Phiadelphia.

#### For Sale.

The stock and interest in a Sash, Door and Blind business in a Southern city. The business is large, profitable and well established. There is no limit to the amount that can be done. None who there oughly understands the business can get good wages. Address by wages. Address by

#### For Sale.

A Valuable Charcoal Iron Property. A Valuable Charcoal Iron Property,
Located on the James River, to miles south of the
Chosapeake & Ohlo R. R. at Williamson, known as the
Ralisbury Furka CE, on the Riemmond & Allegheny
Raliroad, at which place there is a Raliroad station,
Ralisbury Furka CE, on the Riemmond & Allegheny
Raliroad, at which place there is a Raliroad Station,
Composed of you acree of the sation. The property is
composed of you acree of the sation. The property is
are dive family houses, a grist mill and a store homeready supplied with goods for the work hands and
the country round about, also a stable, blacksmith
and wagon shop. The ore is taken from a tunnel in
the mountain in tramway cars and dumped into a
flume which runs down to the foot of the mountain,
water is brought along the side of the mountain in
a flume to where the ore is dumped, and before it
reaches the foot of the mountain the ore is thoroughly washed. The furnace will go out of blast
about the first of February, it has made in this blast
about to the first of February. It has made in this blast
about you to the ore in the state of the mountain the reaches the foot of the mountain the reaches the I be sold on easy terms.

Apply to EUGENE KELLY,

45 Exchange Place, New York. Jan. 7, 1882.

#### For Sale.

Stock of Hardware in Columbus, Onio, Clean

By a practical Galvanizer, competent to take first-class Commission or Manufacturing House, Office of The Iron Age, 83 Reade St., New York.

Wanted.—A situation as Foreman by a man who has had twenty-five years' experience in the iron foundry business, and who has a thorough knowledge of light castings. Can furnish good reference. Address FOUNDRY, Post Office News Room. Bridgeport, Conn.

An Experience College of the Iron Age, 83 Reade St., New York.

Wanted.—A situation as Foreman by a man who has a thorough knowledge of light castings. Can furnish good reference. Address FOUNDRY, Post Office News Room. Bridgeport, Conn.

An Experience College of the Iron Age, 83 Reade St., New York.

College of Pumps, Engines and Machine, with the Hardware trade in Middle and Western States, is open for engagement with first-class, is open for engagement with mist-class. Address the name and particulars, or Experience in relating Hardware and Stoves. Am young, and not after the best of references. Address L. O. Walker, Indianola, lowa.

Penching Frees and Steven, and Steven, is one if desired; Fayetteville population about so will be stated in which and shift superior pounds. If the Iron Age, 83 Reade St., New York.

Description of the Iron Age, 83 Reade St., New York.

Columbus, Ohio.

Tolumbus, Ohio.

FOR SALE.—The Fayetteville, Country, will be village of Fayetteville, Onondaga Country, on the village of Fayetteville, Onondaga Country, with name and particulars, or Experience in the Iron Age, 83 Reade St., New York.

Wanted—A situation as Foreman by a man who has a thorough knowledge of light castings. Can furnish provide with machinery and tools of all kinds; also a large stock of valuable patterns; at the remained provide with machinery and tools of all kinds; also a large stock of valuable patterns; and the remained provide with machinery with machinery, title fountry in the middle and skinds; also a large stock of valuable patterns; and the remained provide with machinery, title fountry in the middle and skinds; also a

#### Special Notices.

#### JOB LOT.

# **ELEY BROTHERS'**

#### GENUINE BLUE CARTRIDGE CASES.

Twelve Gauge.

The best paper shell in the market. For sale cheap. Supply limited.

ALFRED FIELD & CO., 93 Chambers St., N. Y.

#### J. SEIDEL.

#### Commission Merchant,

Box 662, Habana, Cuba.

Will be happy to accept the representation of first-class houses manufacturing hardware.

Reference : COLLINS & CO., e12 Water Street, New York.

### E. BISSELL & CO.,

Wholesale Hardware Auctioneers, 83 Chambers and 65 Reads Sts., N. Y.

# Sales held weekly for the trade. Consignments solicited. We refer to the leading Manufacturers and importers. Bolt, Nut and Washer

Machinery For Sale. Six 1½-in, double-head Bolt Cutters with automatic stop, and powerfully geared, and particularly adapted to cutting Track Bolts or large quantities of Bolts of various sizes.

Four ¾-in, double-head Bolt Cutters, the same as are used in all large bolt factories.

Two 4-spindle and One 6-spindle Nut Tappers.

Two No. 2 Washer Machines for making all washers to ¾ in.

One No. 1 Washer Machine for washers up to 2 in. Bolt Size.

One No. 1 Washer with latest and best improvements for all bolts to 1 in. Strongest heads and largest variety of any machine in use.

One No. 1 Nut Machine for 11/2 in. Nuts, hexagon or square. Two No. 2 Nut Machines for No. 1 Nuts, and all

### under. Two No. 3 Nut Machines for 1/2 in. Nuts, and all smaller; 1000 lbs. of 1/2 in. Nuts made per day. YORK & SMITH.

Cleveland, Ohio. A REWARD OF \$100

Is offered for the most useful and merchantable article to be made from Cotton Tie Band Scrap Iron. Right reserved to reject any or all samples. The one accepted will be remitted for in cash.

Address

J. S. BROWN,

#### Galveston, Texas. For Sale.

Contents of large Linseed Oil Mill, consisting of 28 Hydraulic Presses, Pumps, Steam Pans, Tanks, Roll Mills, Elevators, &c., together or separately, very cheap.

H. C. BRIGGS,

#### 494 Water Street, New York. For Sale.

A well-established Hardware business, Stock, Fixtures and Good Will, located in Northern New York, on the line of D. and H. C. Co. Railroad. ess of twenty years' standing. Add HARDWARE TRADE, Address

#### Office of The Iron Age, 83 Reade St., New York. For Sale.

Two Corliss Condensing Beam Engines,

THE HARTFORD ENGINEERING CO., Hartford, Conn.

#### For Sale. SECOND-HAND

DROPS AND LIFTERS BEECHER & PECK,

#### Lock Box 122, New Haven, Conn. For Sale.

Foundry and Machine Shop. Large assortment of Patterns, Business established in 1824. For terms and full particulars apply to C. VAN BRUNT,

#### 121 Chambers street, New York. For Sale.

One so inch Engine, one roo-horse Locomotive Boiler; two large Pulleys, 30-inch face; a 20-inch Rubber Belt, &c. All in good order, and will be sold for less than value to make room for larger. Can be seen running at

AKRON RUBBER WORKS.

## For Sale.

From 750 to 1000 acres of coal land, with two 5-foot coal seams and all the minerals of Eastern Ohio and Western Pennsylvania; has good iron or steel manufacturing site, with railroad and Ohio or steel manufacturing for printed circular of

#### FOR SALE LOW.—ENGINE.

A Vertical High-Pressure Steam Engine, com plete. Cylinder, s4 in. by 48 in. Built by A. J. Sweeney & Son. Can be seen in daily use at our nail factory.

LA BELLE IRON WORKS,

Wheeling, West Va.

#### Special Notices. TO MANUFACTURERS.

For Rent, in the City of Newcastle, Del., 33 miles from Philadelphia and near Wilmington, the following desirable Workshops and lot of Ground :

nd: , r Building, 344 feet x 37 feet. , a Building, 55 feet x a8 feet. , a Building, 56 feet x a6 feet. 4 Building, 36 feet x 18 feet. 55 Building, 135 feet x 33 feet.

Also desirable Office, Sheds, &c. Railroad tracks through the yard and adjacent to Delaware River. Address

DELAWARE IRON CO. Newcastle, Del., Or LOCK BOX 12. Philadelphia Post Office.

### For Sale.

The Property of the Wampum Iron Company, Limited. Furnace, 12 x 50, just blown in after complete repairs; Coal Banz, Limestone Quarry, Coke Ovens and Coal Washing Machinery; all in complete running order. Will be sold ressonably. WAMPUM IRON COMPANY, LIMITED, Wampum, Pa.

#### For Sale.

THAT VALUABLE

#### FURNACE PROPERTY AND PLANT,

situated in fuscarawas County, Ohio. on the P. C. & St. L. Rahroad, and the Ohio State Canal, known as St. L. Railroad, and the Ohio State Canal, known as THE GLASGOW IRON WORKS, consisting of two Blast Furnaces, 72 feet high, erected in 1874; two Blowing Engines, eight Boilers, to feet long; four Hot Blast Ovens; two Furnace Hoists, with two pairs "Crane Bros." Hoisting Engines, and all modern furnace appliances and plant. Also Locomotive, Cars, about three miles of Railroad, a. "Blandy's "Saw Mill with engine and boiler, two sinch and two Sinch Donkey Pumps, and about 1306 feet of Sinch cast from pipes, as well as Workmen's Houses, Offices, &c., &c. Also about 1500 feet of Sinch cast from pipes, as well as Workmen's Houses, Offices, &c., &c. Also about 1500 feet of Sinch cast from pipes, as well as Workmen's Houses, Offices, &c., &c. Also about 1500 feet of Sinch cast from pipes, as well as Workmen's Houses, Offices, &c., &c. Also about 1500 feet of Sinch cast from pipes, as well as Workmen's Houses, Offices, &c., &c. Also about 1500 feet of Sinch cast from pipes and pipe sinch pipe si

JOHN FREW, Port Washington, Tuscarawas County, Ohio.

#### For Sale.

The Industrial Works of Shamokin, cwned and successfully carried on for a number of years by the late Win. Brown, deceased, consisting of Foundry and Machine Shop, and a large stock of Patterns regarded as part of the property. Boiler Shop, Blacksmith Shop and Factory for the manufacture of heavy coal screens. Well located in the borough of Shamokin, Pa., with the best facilities for shipping by rail, and surrounded by a district contributing all the work that a shop of that kind can possibly turn out. The works are now running, but in a very short time possession can be given. Easy terms of payment are offered to suit a purchaser of himited capital.

Offered for sale by

WM. McILVAIN & SONS,

Reading, Pa.

#### For Rent.

A Complete Muck Bar, Merchant and Guide Rolling Mill. Capacity 10,000 tons, and at present in full operation. This preperty is situated on both the Fennsylvania and Philadelphia & Reading Reilroads. Satisfactory security will be required

## For further particulars address P. O. Box 81, Harrisburg, Pa.

One 18x30-in, Hormontal Engine. One pair Horisontal Cut-off Engines—Cylinders 16x42 and 16x36 in.; band ity-wheel, 1s ft diam, 2s-in face. Have been run together; will be sold in present shape or separately. Two Locomotive Boilers, 80 and 30 H. F. cach. One 4 ton "Otis" Freight Elevator. P. each. One 4 For particulars address BELCHER & BAGNALL, 40 Cortlandt St., N. Y.

For Sale.

#### CHARCOAL FURNACES FOR SALE.

A gentleman having had three good Charcoal Furnaces placed in his hands for sale, would be pleased to correspond with parties desirous of Address IRON, Box 73, Office of *The Iron Age*, 83 Reade St., New York

## FOR SALE OR TO RENT

New, light Factory; 70,000 floor feet; 275 H. P. Corliss Engine, giving power at minimum

Shafting, piping, elevator. &c., all complete and modern. Lowest insurance rates. Railroad siding and ample yard room. Immediate possession.

A li Machinery at low prices.

SHARPE RIFLE COMPANY,

#### Bridgeport, Conn. For Sale.

# Hardware Stock and Business.

Located in one of the best towns of Northeastern Pennsylvania. Stock clean and well assorted, suited to the requirements of the trade where located. Business of 30 years standing. For terms and full particulars apply to JAMES S. KURN, Towanda, Pa.

#### For Sale.

#### STEEL RAILS-IN STORE.

1000 Tons 40 lb. "Guests,"

1000 Tons 411/4 lb. "Rhymney,"

with Steel Fish Plates to match the 40 lb. Rails. Iron and Steel Rails of any section, for delivery in the United States, or f. o, b. English ports.

WM. LAWRENCE STROUD.

104 John street, New York.

#### Manufacturing Property for Sale.

The Real Estate of the late Foundry and Mathine Company of Taunton, Mass. Buildings consists of Foundry, Machine, Erecting and Blacksmith Shops, and covering about 60,000 square feet of ground. For particulars apply to

THE GEORGE PLACE MACHINERY AGENCY,

The george Place Machinery agency, and was further strengthened by the annuncement that Secretary Folger would make an additional call for \$20,000,000 continued 6's. On Tuesday the posted rate for handows, which the strengthened by the annuncement that Secretary Folger would make an additional call for \$20,000,000 continued 6's. On Tuesday the posted rate for handows and the strengthened by the annuncement that Secretary Folger would make an additional call for \$20,000,000 continued 6's.

# **Tra**de Report.

BRITISH IRON AND METAL MARKETS.

[Special Cable Dispatch to The Iron Age.] LONDON. WEDNESDAY, Feb. 8, 1882. Scotch Pig.-The market has been un-

steady during the week, prices fluctuating in both directions, but is now steady, and there is a fair business doing. Quotations show a decline of 6d. in Coltness, Summerlee and and Carnbroe, and 1/ in Gartsherrie, Langloan, Glengarnock and Eglinton. The following are to-day's prices for No. 1:

Gartsherrie, alongside, Glasgow..... Coltness Summerlee Langloan Glengarnock Ardrossan 53/6 Lighterage from Ardrossan to Glasgew is 2/ @ 2/6 per ton.

Cleveland Pig.-The market has been depressed since last report, but has not rallied, and prices are firmer. We quote as follows, f. o. b. usual ports:

Middlesbro' No. 1 Foundry ....

No. 2

No. 3

No. 4 Forge ..... .41/

West Coast Hematites. - Sales have been very large this week, and prices are firmer. We quote mixtures Nos. 1, 2 and 3, 62/, f. o. b. shipping ports. Sales of 30,000 tons of Rails, blooms and Pigs are reported, ex Hartlepool for American ports, next four months. Large lots of iron are now lying in Bristol Channel ports, awaiting cheaper freights.

Blooms.-The market is quiet and prices steady. We quite 7 x 7, 112/6.

Manufactured Iron.-The market is quiet, and all kinds of finished iron are steady. We quote, f. o. b. :

				Zi.		a.			
Staffords	aire Ma	arked B	ars	7	10	00	8	0	0
1.0	M	edium		7	2	60			
0.0	C	ommon		6	15	00	7	0	0
Hoops, 20	W.G.	& over,	Best	9	0	00	IX	0	0
61	8.6	0.5	Med	7	15	00	8	IO	0
4.6	99	- 81	Com	7	5	00			
Cotton Ti									
Sheets, so	W.G.	& unde	r, Ref	10	0	00	13	0	0
5.6	0.0	81	Com.	8	0	00	9	0	0
Welsh Ba	rs			6	0	00			

Steel Rails .- The market is quiet and prices steady. We quote, f. o. b., future delivery, £6. 5/@ £6. 15/.

Iron Rails.—There is but little inquiry and quotations are nominal. We quote Welsh, 30 lb and upward, £5. 10/, f. o. b. usual shipping ports.

Old Rails.—The offerings are moderate and sales small. Prices are firmer. We quote as follows, c. i. f. New York: Old Tees, £4. 5/, and Old D. H.'s, £5.

Scrap.-There is but little offering in the market and sales are light. Prices are steady. We quote Heavy Wrought, c. i. f. New York, £4. 5/ @ £4. 10/.

Copper -The demand continues to fall off and transactions are small. We quote Best Selected, nominally, £73.

Tin.-The market has recovered from the depression noted last week, and prices are higher than before the decline, the quotation for spot Straits Tin being £114, and for futures, £115. 10/.

Tin Plates.—The market continues quiet and prices steady. We quote: Tin Plates, 10 x 14, 1st qual. Charcoal ... 23/ @ 25 " ad " " .22/ @ 23/ " nat " Coke ... .20/ @ 21/ " ad " " ... .18/6 @ 19/ Spelter.—The demand is small and quota-

tions are nominal. We quote ordinary, at shipping port, nominally, £17. 10/.

mand. nominally, £14. 10/.

Freights.—Steam freights from Glasgow are quoted 20/ to New York. Liverpool to totals of this week compared with that of New York, steam, 17/6, and Liverpool to last week : Philadelphia, 22/.

#### FINANCIAL.

Office of The Iron Age. Wednesday Evening, Feb. 8, 1882.

The much-dreaded settlement day in Paris passed away quietly, and the temporary financial disturbance in London, reflected in New York, has almost ceased to be a source of uneasiness. There is no longer a demand for gold remittances from this side of the Atlantic; not only so, but it is now known that no specie shipments from New York would have taken place but for the sale of American securities held on foreign account. Less than \$4,000,000 left the country, and only a part of this on account of the collapse on the Paris Bourse. After Wednesday when it became apparent that the rate of discount in England would not be advanced, Wall street assumed a more cheerful tone. The money market was easier, the Govern ment bond market was strong, and foreign exchange weaker for demand sterling, as well as Continental bills. On Monday the favorable advices from Europe were corroborated. In Paris, Rentes advanced, and the Bank of England, instead of losing gold, as it had been for some time previously, reported a gain. The New York market improved on the reports concerning the financial situation abroad, ms Chambers St., New York. bankers' sight sterling was reduced to \$4.90, Interpendence. 112 9.20

sixty days, remaining at \$4.95. To-day the market for foreign exchange is heavy, commercial bills are scarce, and the demand for remittance small. Paris Rentes and Consols are lower, but bankers here do not know why.

The Stock Exchange was unsettled early in the week by the foreign news, but on Friday more favorable advices from London caused a recovery—the Northwesterns and Trunk lines the strongest. On Monday and Tuesday the market was strong, but irregular, and to-day closed 1/8 @ 1 per cent lower as a rule on the general list, compared with yesterday. The exceptions were St. Louis and San Francisco, which closed 3 @ 33/8 higher; Manhattan Railway, 2 per cent.; Metropolitan, 21/2; Hannibal and St. Joseph, 41/2, and I per cent. higher.

Money has ruled easy most of the week at from 3 to 6 % on call loans. Prime commercial paper, 60 to 90 days, is quoted 5 @ 5 1/2 %. The supply offering is steadily increasing and rates of domestic exchange are more in favor of New York.

Another call for the redemption of United States 31/2's (extened 6's) was issued from the Treasury yesterday. This will leave about \$88,000,000 to be called between this and the 1st of May, when action will be taken by the Government for the redemption of the 31/2's, extended 5's, \$400,000,000 in amount, of which the United States Treasurer has in pledge for the National banks over half.

The exports of domestic produce from this port during the past week were fair, the total being \$6,969,200, against \$8,303,132 for the same week last year. The movement of breadstuffs continues light. Provisions and cotton are moving moderately. In manufactured cotton the export request has been well maintained, and for the China and African markets some good contracts have been placed recently. The balance against the port of New York in the merchandise movement since January 1 this year is \$18,123,121, against \$4,358,672 to the same date of 1881, but this increase is partly offset by the reversed movement of the precious metals, leaving out of the account imported securi-

In the railroad war an important point is gained by the appointment of ex-Senator Thurman, of Ohio, Hon. Elias B. Washburn, ex-Secretary of State, and Judge P. M.

3 were \$65,787, consisting of \$32,291 in and Keys, will be 25 per cent. off regular gold, and \$33,496 in silver, as against a total trade list, and 2 off cash." of \$633,326 for the week ending February 5 last year. The importations since the 1st of Strap and T Hinges, held in this city to-day,

the corresponding pers		anuary 1
GoldSilver	1882. \$250,964 140,504	1881. \$4.955,713 818,674
Total	\$400,468	\$4,814,387
Gold	1881-82.	1880-81. \$73,874,681 2,670,025
Government bonds		\$75,564,706 close were

Government bonds the the cross	AA CA
quoted as follows:	
Bid.	Aske.
U. S. 41/4's 1891 registered 1131/4	1137
U. S. 41/2 's 1891 coupon 1741/4	115
U. S. 4's 1907 registered118%	1183
U. S. 4'8 1907 coupon 118%	8183
U. S. Currency 68 1895	40000
U. S. Currency 68 1896129	
U. S. Currency 68 1897 130	-
U. S. Currency 6s 1898	
U S. Currency 68 1899 139	-
Sixes continued tor	1013
Fives continued 102%	1089
701 1 1 1 1 1 1 1 1 1 1 1	

The bank return for the week shows a loss of \$2,720,025 in reserve, which now stands at Lead.—The market is dull, with small de- \$6,381,825, against \$6,826,900 at this time We quote English Pig, common, last year, and \$3,331,450 for the corresponding date in 1880.

The following is an analysis of the bank

TOPUT MOON :				
Loans Specie Legal t'd'rs Fot.reserve Deposits	68,355,600 19,773,600 88,129,200 316,109,400	Feb. 4. \$328,852,000 66,619,900 18,843,400 85,403,300 316,325,900	Dec. Dec. Dec.	\$5,885,500 1,735,700 930,200 2,665,900 216,500
Reserve required Surplus Circulation.	79,037,350 9,101,850 30,040,800	79,081,475 6,381,825 20,089,000 STOCKS.		54,725 2,720,025 48,400

The closing quotations for mining stocks vere as follows: Bid. Asked

	BRG.	AHE
American Flag	10	224
Amie	18	I
Alice		3.8
		1.0
Belle Isle		8
Bulwer	3.45	2.5
	4.90	
Buli Dom	26	34
Bonanza C	5	34
Boulder	3	
Boston C	34	4.12
Big Pittsburgh	96	3.00
Bradshaw	49	59
Beauce,	1.40	400
Calaveras	10	***
Caledonia	91	95
California	2.8	8.
Climax	38	45
Consolidated Imperial	XX	23
Consolidated Virginia	75	70
Chrysolite		4 - 55
Cent. Ariz		1511
Cherokee		50
Dahlonega		8
Durango	36	38
		75
Dunkin	61	64
Eureka C	1 10	12.00
F. De Smet		7.25
Granville	3	4
Goodshaw	34	37
Great Eastern	8	9
Green Mountain		2.05
Gold Str		40
Hukill	70	7.5
Horn Silver		37.00
Hibernia	15	***
Hortense	30	31
Independence	3.9	255

		-
Lacrosse	23	23
Leadville	64	
Little Ditte		r.80
Little Pitts.	1.70	
L. Chief	0 + 1 +	1 00
Mariposa	25	45
Mar. Pref	25	50
Moose	9.1	
Miner Boy	7	- 8
Navajo	40	
Nor. Belle	10.64%	
Ori. and Mil	31	
Plumas	30	25
Rappah'k	33	-
Robinson	33	1111
R. Sun		5.50
Dod Flank	65	75
Red Eleph	2.0	
S. Nevada	9.00	9.50
Silver Cliff	3.20	9:30
Sutro	87	88
Spr'g Va!	4.00	4.30
Stormont	1.30	1.40
S. Bulwer	85	
S. Hiten	16	18
South Pacific		
St. L. 1 and 4.	3.00	
St. L 2 and 3	24	
Tioms	1,30	1.35
Tioga		21
Tuscarora	9 1 9 -	87
Union Con.	88.25	
Unadilla	10	3.2
Vizina	2.75	2.00

#### GENERAL HARDWARE.

Although the amount of new business during the week has not been as large as during some of the weeks in January, still, considering the very unfavorable weather, the aggregate is satisfactory; manufacturers and jobbers are fully employed, and are, in most lines of goods, far behind their orders. The tone of the market is strong, beyond question, and the only changes in prices that have come to our knowledge since Wednes day last have been advances on former figures.

The demand for foreign Hardware is generally reported light, but, taking the season into consideration, there is nothing to complain of in regard to the volume of business Values are firm and steady, and no changes of importance are announced,

We learn that while no circular advance ing the price of Burden's Horse Shoes has been issued, the present price is 4% cents per pound, f. o. b., Troy, N. Y., subject to the usual quantity discounts at the close of the season; orders for future delivery are, however, only booked at prices ruling at time of shipment. Adding 1216 cents per keg for freight, the price from store here would be \$4.871/2 per keg.

The demand for Nails continues light, but the tone of the market has not weakened a ex-Secretary of State, and Judge P. M. Cooley, of Michigan, as the Commission to decide the question of differential rates. As the gentlemen declined to act unless their the gentlemen declined to act unless their decision should be final, it is announced that P. & F. Corbin have issued a circular this condition will be accepted by the roads.

The importations of specie and bullion at this port during the week ending February lished rate, from this date, for Cabinet Locks

January and since the 1st of August com- the price was advanced to discount 40 and 10 pare as follows with the movement during and 10 per cent., formerly 45 and 10 and 10 per cent. A meeting of the manufacturers of Wrought-iron Butts was also held, at which prices were advanced as follows Narrow Butts, Light Narrow Butts, Light Inside Blind Butts, Back Flaps, Table Hinges and Broad Butts, discount 40 and 10 per cent.; Reversible Butts and Loose Joint Butts, discount 45 and 10 per cent.; Bronzed Light Narrow Butts and Bronzed Light Inside Blind Butts, discount 15 and 10 per

cent. J. Haish & Co., DeKalb, Ill., and Johns town, Pa., manufacturers of Barb Fence Wire, have issued a circular under date of the 25th ultimo, in which they say : take pleasure in announcing to the trade that we have made arrangements with Mesers. Graham & Haines, 113 Chambers street, New York, to represent us in their market, and we have given them full authority to sell at all times at our lowest and best factory prices and terms. We propose carrying with them a full stock of our goods to supply local and immediate orders."

We have received the following circular February 7, 1882,

Chalmers & Murray, 76 Reade street, New York, sole agents for Charles Spruce & Co.'s warranted hand-cut files, hereby announce to the trade that we have adopted the new list the trade that we have adopted the new list known as the list adopted by the File Manufacturer's Association, July 1, 1881. Thanking our friends for their liberal patronage in the past, we trust that by maintaining our high standard of quality and prompt attention to orders to merit a continuance of their esteemed favors. All orders and correspondence should be addressed to,

Very truly yours, CHALMERS & MURRAY.

following circular and revised price list of Machine Screws and Machine Screw Taps manufactured by them :

machine Screws and Machine Screw Taps manufactured by them:

PROVIDENCE, R. I., February 1, 1882.

Gentlemen: We have very largely increased the variety of Machine Screws kept in stock, and as per our new price list herewith, we now offer 213 varieties of length and size, in place of the 63 formerly offered. On this additional variety we have made the prices on same basis as those of former price list, and done away with the extra charge usually necessary when the goods are made to order. Our stock sizes of Machine Screw Taps have also been largely increased in number, to compare with the increased variety of Screws, and herewith you will also find a new price list for Taps. With the present very large variety of Machine Screws and taps of regular standard sizes, we meet as never before the requirements for screws used in metals. Consumors using, or intending to use, machine screws, will find it greatly to their interest to adapt their work to our regular sizes and lengths kept in stock, as thereby they insure more prompt attention to their wants. Lithographic il-

lustrations of the principal screws in use lustrations of the principal screws in use will be sent on application. The present variety covers nearly all possible wants, and being much more comprehensive than that of any other manufacturer, it is manifestly for the benefit of parties interested to purchase of us or of dealers carrying an assortment of our goods. Yours respectfully,

AMERICAN SCREW COMPANY.

AMERICAN SCREW COMPANY'S REVISED PRICE LIST

				y 1, 1882.
Size of Screw Gau;		Number eads to	of Inch.	Price per Dozen.
No. 2		55		
No. 3		48		4.00
No. 4		34 36 4	0	4.00
No. 5 No. 6		32 36 4	0	4:00
NO. 0		30 32		4:00
No. 7		30 32		4.00
No. 8		30 32		4.00
No. 9		24 30 3	2	4.00
No. 10		84 30 3	2	4.00
No. 12		80 24		4 - 00
No. 14		20 24		4.40
No. 16			0	4 - 4/2
No. 18		16 18		6.40
No. 20		16 18		5.30
No. 22		16 18		5.30
No. 24		F4 16		5.30
No. 26		84 16		6.30
No. 28				6.30
No. 30		14 16		6.20
Special a	mes and th	reads m	ada to and	on out offered

TRON MACHINE SCREWS-PER GROSS

																	1						
	24	25	7,0	2	1/41	745	136	1/4	11/8		76	3/	38 · · ·		7 16.	36	5-16	%	3-16.	Inch.		No.	Th.in.
																				Cta.	1	10	ta 00
													00	52	55	55	55	55	SS	Cts.	-	w	800
											:	05	60	CR CR	65	55	\$5	SS	55	Cts.	1		32, 3
						:					75	50	00	55	85	'S US	50	55	55	100	1	(M	36, 40
:									:	20,5	75	65	00	S	SS	Un	55	55	55	18	1	a.	1
									95	88	75	0.5	50	0,0	000	205	05	Sos		Cia	1	7	30, 35
		-						100	95	85	75	50	05	200	000	200	50	200		Cts.		00)	20
			:	:		:	110													Cts.	-	0	24
						011	110	100	95	95	00	75	75	75	75	75	75	2.50		Cus.	1	10	30. 32
:			* * 4		130	120	130	TOO	100	95	95	005	90	200	000	35	3			0%	-	60	100
	:					0.83														Cts.	-	14	34
			273	100	CS3	135	130	125	C#1	511	DIL	502	205	501	502	Sos				(38,	-	16	10, 18, 20
		200	190	170	100	145	140	135	130	130	223	120	10 10 10	115						Cts	1	1 8 M	1
						160												-		CTS.	1	20	16, 1
						002														Cla.	-	12 52	18
						200														CE	1	24	1
						225														Che.	1	90	14
						245														Cis.	1	12 00	16
						275														Cre.	1	30	-

BRASA MACHINE SCREWS-PER GROSS.

3	274.	255	255		136	175	198.	1 1/4	2%	100	38.	×	*	16	7-16	36	S-80	×	3-16	Inch.	NOS.	I'd in
	-																			Cte.		D. 50
										:	-	1		70	3	70	70	70			12	-
-	-	-	:	:	:	_		-		:		:	00	70	70	70	70	75	70	100	Ted	0
	:			4		2		Ē				OIX	90	70	70	8	70	70	70	Cita.	*	38, 36,
	:		:			-					130	LIO	90	80	80	80	80	80	80	Cus.	un	6, 40
:				4.1.4		:														Cis	0	1
																100				Cha	7	30, 32
						***	140	200												Cta	00	12
	-	Const		-				225												Cus	9	24.
								250												Cts	10	30, 32
								270									0.	31		Cts	12	8
								325												Cts.	14	2.1
								375												Cts.	16	16,18, 20
		800	775	675	625	545	520	480	450	415	300	300	330	330						Cta.	00	
	940							550												Che.	8	16, 18
								700										-		Ota.	22	00
1230								780											1	Cts	24	
-								805												Cts	36	14
1650																			1	Cte	200	. 16
								1080			2								Ì	-	30	

On Machine Secrews made to order, differing in length, size, thread, or head, from our regular standard Flat and Round Head Machine Screws, special prices will be given on application, and also on Filletster Head Machine Screws when ordered is less quantity than ten gross of a kind. We have received the following notices of

BALTIMORE, February 1, 1882.

The American Screw Company have issued, under date of the 1st instant, the following circular and revised price list of Machine Screw and Machine Screw Taps

DEAR SIRS: Our large and constantly increasing business has long demanded a warehouse of greater size, and more conveniently situated in the business center of the city. We are pleased to announce to our customers and friends that we have listed the current warehouse. No. 56 moved into our new warehouse, No. 56 Hanover street, between Lombard and Pratt

cented on the main line of the Pennsylvania Railroad, and is as convenient for the ship-ment of goods as our former location. Awaiting your future orders, we remain.

Yours respectfully, CHALFANT Mrg. Co., Atglen, Pa.

#### IRON.

A movement is on foot looking to the es tablishment of an Iron Exchange in this city, and a preliminary meeting will be held on Wednesday, the 15th inst., at Delmonico's No. 2 South William street, at 3 o'clock, p m., to which the Iron trade in all its branches are invited. We have received the following minouncement:

New York, January 31, 188s. Sun: It being desirable to obtain an expression of opinion from all that are interested, on the question of organizing an "Iron Exchange," the undersigned request your presence at a meeting to be held for that purpose on Wednesday, February 15, 1882, at 3 o'alook p. m. at Delmonico's, No. 2 South William street: B. G. CLARKE.

> CHUSTER GRISWOLD. GBO, A. EVANS. Post, Martin & Co. MAYER BROTHERS & Oo PERRINS & CHOATE. U. O. CRANE & BRO T. D. HAZARD. B. B. LEMAN & Co. THOS. J. POPE & BRO. JAS. LEE & Co. JOHN H. THOMPSON & CO. JAMES JOHNSTON. WM. LAWRENCE STROUD. 9. D. SCHUYLER. NAYLOR & Co. J. B. & J. M. CORNELL

E. F. HATFIELD, JR.

E. S. Wheeler & Co.

American Pig .- Although the tone of the market is not as active as it was during the month of January, and the inquiry has tapered off considerably, the deliveries on contracts continue to absorb the production, and we do not hear of the slightest pressure to sell. Prices rule remarkably firm as follows: Foundry No. 1 X, \$26.50 @ \$27; Foundry No. 2 X, \$25; Grey Forge, \$24.

DELAFTELD & CHIPMAN.

Scotch Pig.-The demand for Scotch Iron is fairly active, and for some brands the shipments to this port are engaged for 30 days ahead. Sales announced during the week include 400 tons Glengarnock, 100 tons Carnbroe and about 600 tons various brands, in lote, at our quotations. The difficulty in obtaining freight room for Pig Iron from Glasgow to this port is greatly increased by the heavy demands on the steamship companies by shippers of potatoes, the high prices paid for this class of freight-ranging, it is said, from 25/ to 30/ 10 ton-making it first choice. We quote Eglinton, \$24.50 @ \$35; Carnbroe, \$25.50 @ \$26; Coltness, \$27.75 @ \$28.50; Glengarnock, \$25.50 @ \$26. and Gartaherrie, \$26 @ \$27.

Bessemer Pig.-We hear of a sale of 3000 tons Bessemer Pig for shipment, but the terms are withheld.

Rails -- Considerable business in Steel Rails has transpired during the week, and sales are reported of 13,000 tons by the Lackawanna Iron and Coal Company, for fall delivery, at \$57.50 at mill, and 6000

tinues fairly active, and difficulty is experienced in keeping up assortments. The price of Refined Bars from store was to-day advanced from 2.9% to 3%. The demand for Structural Iron continues to be very heavy and a good many orders are being placed abroad. A. R. Whitney & Co., No. 58 Hudson street, inform us that they are importing this class of Iron and can supply Channels, Beams, Angles and T's at about 1/4 @ 1/2 # below the price of the domestic article. They claim to be able to execute orders in about 30 days after receipt of specifications.

the checause it suits certain important parties for the moment to exercise some pressure. The chief producers decline parting with any under 20°, which is also the asking figure for Baltimore. In Europe the metal markets, Copper included, are looking upagain, as was to be foreseen. The panic on the Paris stock exchange, it seems, merely knocked down some shares inflated beyond measure, affecting only temporarily solid securities, and as all the powerful financiers and banks did not want the panic to become a real one, extending to everything alike, all co-operated to keep the flurry within bounds. The result has been a general rebound. At any rate it is good for the spring trade in merchandise, both in Europe and here, that this cloud which was overlanging the skies has been unloaded so early in the year, and that has been unloaded so early in the year, and that we need not trouble ourselves about it any no change in manufacturers' prices. We further. Things may now take their natural course and merchandise has got a fair chance before is wherever intrinsic value has been trade.

The supplies were thus	distributed:	
1881. Toms. Chili 40,589 Spain 32,170 Australia 0,249 Sundries 80,655	1880. Tons. 45,499 32,616 0.569 16,839	1879. Tons. 49,864 27,902 9,917 19,713
The deliveries were :	104,521	109,396
1881. Tons. Chilian 50,890 Spanish 31,783 Australian 8,051 Sundries 21,188	1880, Tons. 43,328 33,211 7.655 16,120	1879. Tons. 44,397 28,361 10,739 20,365

111,012 100,324 103,862 The Bureau of Statistics prints the following figures on the imports and exports of Copper for the eleven months of the year

November. 1881. Imports, foreign76,599 Re-exports	11 mos. 1881. 769,770 196,214	11 mos. 1880. 4,513,646 754,635
Net imports 72,742 Exports, domestic 140,758 The following figures, in movement may prove of in	cwts., or	3,750,011 322,287 1 the ore
Imports, foreign	11 mos. 1881. 57,278	11 Mos. 1880. 44.531 2,268
Net imports	\$2,394 13,774	42,263 18,647
Excess of imports		23,616

toms, 31¢ @ 32¢; Braziers, 30¢ @ 36¢; Circles, 33¢ @ 36¢; Sheathing, 28¢, and Bolt Copper, 30¢; Segment Sheets, 33¢; Fire-box ditto, 30¢.

Tin.-Our market has been lifeless during Tin.—Our market has been lifeless during the week. The violent fluctuations in London have shaken confidence somewhat; said market has recovered, however, to £ 14 again, with Straits Tin. We do not hear of any wholesale lots sold lately. We quite Straits Tin, 25\$\psi\_0 25\$\footnote{\phi}\_2\$ according to size of lots, nominally, and other sorts in proportion. Mr. Charles Nordhaus, 17 Cedar street, New York, favors us with the ensuing statistics: statistics:

Stock, January s, in the United States in first	Tor
hands. Arrivals in all January	2,4
Consumption in February	2,4
Stock February 1 Tons.	1.7
Afloat from Singapere	

_	1,750
Visible supply February 1	3,500
According to Messrs. Gilfillan, Wood &	
Singapore statement, the shipments from	a the
Straits settlements to the United States	dur-
ing the first eleven months were :	
and the second s	

0.							-	N											mos.		R E	mos.,
The ing.							8	t	B	Ú	i	8	*	i	C	18	pub	lis	shes	the	fo	llow-
1877.																						3,47
																	58.7			0.0		3,513
																	100,5			0.0		6,01
																	137,6			1.6		8,232
																	Picu 76.5	22	eq	nat	to	Tons.

Imports	1881. 15,527 10,128	11 mos., 1881. 154.463 14,881	11 mos., 1880. 252,585 4-777
Net imports	5.399	139,573 Tons,	246,808 Tons
Equal to		6,979	12,341
Esquisi co		0,979	13,341

fall delivery, at \$57.50 at mill, and 6000 other makes in lots, on private terms. In Iron Rails no new business is reported. We continue to quote Steel at mill, \$57 @ \$60, according to time of delivery, and Iron, \$48 @ \$50.

Old Rails.—The only business reported since our last is a sale of 1500 tons T's, ex store, at \$30.25. The tone of the market is dull. We quote: T's, \$30.50 @ \$31, and D. H., \$32.

Serap.—We quote: No. 1 Wrought, to arrive, \$31.50 @ \$31, and Yard lots, \$33 @ \$6.50; ditto Pernes, \$5.50 @ \$5.75; Coke Tin, \$5.50 @ \$5.2½; and ditto Ternes, \$5.25. Tin Plates are weaker in England, being cabled 17 @ 17/6 Coke and 21/ Chartonal Right active.

#### IMPORT OF TIN PLATES. November, 11 mos.,

	Imports 283,896 3,307,641 2,924,568 Re-export 224 9,709 8,038
	Net import 283,672 3,297,932 2,915,930
	Lead.—Although not much has been done in the way of sales, which do not exceed 100
	tons for the week, there is quite a strong
١	feeling at this point and in the West, while
	the Stolberg Company in Europe limits its
1	Lead at \$5.40. We quote Common Domestic.
1	\$5.15 @ \$5.20. The fact is that the winter
	has been a remarkably mild one, and conse-
1	quently consumption has gone on unabated.
	Consumers have meanwhile bought consider-
- 1	able in Toursons course some to

Copper.—Sales since our last report have not exceeded 100,000 pounds Lake Superior ably in January, some 3000 to 4000 tons, and are provided for the moment, but in producers the purpose of affecting the market, because it suits certain important parties for the moment to exercise some presents of the chief producers decline parting.

The chief producers decline parting the chief producers decline parting common Domestic the consumption is large. Common Domestic the consumption is largenough to absorb Lead without difficulty Rofined may, nominally, be quoted at \$5.25 @ \$5.30, without anything doing that we hear of. From the returns of the Bureau of

	Statistics we gather the fo		
-	1584.	11 mos., 1881. Tons. 3,626 384	188
1	Net imports 776	3,242	3,10
And other property of the party	Our London cablegram to- —The market is dull, wi Quotations are nominal. Pig is quoted, £14. 10/." no change in manufactur quote: Pipe, 7½¢; She	Common There h rers' price set, 8#;	demand English as been as. W

reached. Best Selected has thus recovered to £74 at London, while Chili Bars have been moderately active at \$5.90 @ \$6 for steadied at £66. To The Iron Age direct per cable from London to-day: "Copper.—The cable from London to-day: "Copper.—The demand continues to fall off and transactions are small. We quoto: Best Selected, nominally £73." This shows a slight receding of £1 in Best Selected since yesterday

1831. 1835. 1835. 1836.

Tons. Tons. Tons.

The consumption in England and France has been. 111,912 103,324 103,861

The supplies were thus distributed:

1881. 1885. 1895. 108,324 103,861

The supplies were thus distributed:

1881. 1885. 1895. 108,324 103,861

Tons. Tons. Tons. 1890. 11891 the United States only imported 2150 tons of Spelter, in January last some 1500 tons were thus referred. While during the United States only imported 2150 tons were thus referred. As 48,86 45,469 45 coived, without lowering the price lastingly How much there is still on the way remains doubtful, but from all appearances another 1500 tons this month would not influence the price much, for the West absorbs more and more for galvanizing purposes, and the peo-ple there have got none for the moment to spare us. Thus sales were made at St. Louis at 6¢, which would be equal to \$6.32 here. We receive per cable to-day: "Spelter.— There is but little demand, and quotations are nominally £17. 10/ ordinary at shipping ports." The following returns for eleven months by the Bureau of Statistics are of interest:

Imports Exports		3.501,777 1,254,700	5,980,937 1,620,468
Excess of imports	1,376,396	2,247,068 et Zinc wa	4,360,475 a aa fol-
lows:			
N	ovember,	rr mos.,	11 mos.,
	1881.	1881.	1880.
	Lbs.	Lbs.	Lbs.
Imports	286,867	8,197,826	4,047,710
Re-exports		16,586	74.578
Net imports	286,867	8,181,240	3,973,112
Sheet Zinc is qui	et at 7569	@ 7344.	

November, 11 mos., 11 mos.,

1881. 1881. Lbs. Lbs.

Antimony.—Some Cookson has been sold as low as 14½ during the week, but what there remains of it cannot be had below 15\(\psi\). The demand is fair, but buyers come forward reluctantly, being in hopes that the price may recede; there is, however, not much prospect for a decline. American is steady

#### OLD METALS, PAPER STOCK, &c.

The purchasing prices offered by dealers are as follows: Copper, heavy. light.. Copper Bottom Yellow Metal... .14% Brass, heavy Brass, light... Composition, Lead, heavy Tea Lead

... 6 \$0.16
... 6 .14
... 6 .14
... 9 6 .16
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		28
dealers) for Rags, &c., are	as follows:	
Canvas, Linen	\$ D. 35c. 64	0
White Cotton, New	4.56 Ct. ED	
	11 mlac 68	
	. K C. US 178	
Soft Woolens	C. (G 10	
Mixed Rags		le
	. C. CD 4	
Book Stock	3750. 69 272	
Newspapers		c
Waste Paper and Scraps	. " 160. @ %	c
	dealers) for Rags, &c., are Canvas, Linen White Cotton, New. White, No. 1. No. 2. Seconds Soft Woolens Mixed Rags. Gunny Bagging. Jute Butts. Kentucky Bagging Book Stock. Newspapers Waste Taper and Scraps.	Seconds

#### FOREIGN TRADE MOVEMENTS.

The following is a summary of foreign trade movements for the past week:

For the wee	1880. \$8,469,472	1881. \$5,259,194 31,034,578	188s. \$8,843,448 37,166,139
Since Jan. 1 Included in merchandise v	the impor	rts were s	
Anvils Brass goods,			\$1,087 4.686

Bronzes	9	9,213
Chains and Anchors	27	1,313
Clocks	13	3,209
Copper		11,521
Cutlery	163	41,798
Guns	26.4	25,909
Hardware	9	795
Iron, pig, tons	5.911	103,094
Iron, sheet, tons	85	6,484
Iron, other, tons	4,189	107,090
Lead, pigs	2,803	11,830
Machinery	23	9X, 157
Metal goods	253	30,530
Nails	8	9,148
Needles	16	4.529
Old metal		19,844
Pins	19	B <sub>1</sub> 373
Plated ware	3	30
Percussion caps	20	4,539
Saddlery	. 9	652
Steel	a5,62e	136,445
Spelter 7	93.427	32,245
Saverware	4	1,331
Tin, boxes	53,970	\$57,750
Fin, 2,079 slabs, 134,454 lbs		89,242
Vire	214	3,308
Anc 4	33,164	17,986
The following are the impo	erts of	leading

articles, compar	ed with p	revrous di	Nos:
	For the week.	of 188a.	Sam time 18
Cutiery, pkgs	x65	798	77
Hardware, pkgs	8	57	25
Iron, R. H., bars.		14,073	
Load, pigs	2,808	3,686	
Steel, pkgs	25,620	130,753	48,26
Tin, boxes	53.970	270,879	818,97
Tin slabs, lbs	134:455	589,585	8,080,91
RX	PERTS OF S	PRCIE.	
13 al	and al Pa	h 4.	

For the week ended Feb. 4: Previously reported..... Total since January 1, 1882 ... \$4,819,520

EXPORTS, EXCLUSIVE OF SPECIAL For the week ended Feb. 7: Total ... 5,795,001 \$8.902,132 Prev. reported... 23,753,737 27,514,197 \$6,969,200 \$5,886,378

Since Jan. 1 ... \$09.476,738 \$35,926,309 \$30,835,598

#### EXPORTS.

Of Hardware, Iron, Machinery, Metals, &c., from the Port of New York, for the Week ending February 7, 1889: Dutch West Indies.

Quan. Val.

Quan. Val.

Quan.	Val.	Qua	n. Val.
Nails, cs 3	\$38	Mf. iron, pkgs 5	80 \$4,779
Hdw., pkgs 95	313	Mach'y, pkgs. 20	7 9,979
Nails, kegs 2	10	Spikes, kegs 1	7 624
Sew. ma., os. 14	365	R.r. mtl., pgs.	3 760
Ptim., gals1778	197	Clocks, pkgs	11 297
			1 300
Hamburg.		Meters, bxs	8 864
Ptimgls637,869	44.060	Tacks, pkgs	5 802
Ag. imp., pkgs 38	963		6 204
Sew. ma., cs 115	1,000	Ag. imp.,pkgs	8 1,661
Hdw., pkgs 45	1,981	Pthn., gals 19,00	0 2,503
Mach'y, pkgs. 10	2,000	Nails, kegs 67	4 8,704
Olooks, pkgs., 529	2,569	Hdw, pkgs 40	1 5,679
Arms, cs 3	313	Steam pumps	3 1,113
Mfd. iron, pgs 3	302	Sew. ma., cs . 4	9 835
Isinglass, bbls 3	200	Pumps, pkgs s	3 3,651
Terrigitates, Core 3	200	Copper tubes.	7 970
Amsterdam		Iron safes	8 107
G1 1			1 85
Clocks, case 1	63	Wire gds , os	8 27
Mach'y, pkgs. 14	900	Pins, pkgs	6 113
Mf. iron, pkgs 13	357		
		Po to Ric	0.
Dutch East Inc		Ptlm., gls900	985
Ptim., gals.421,000	46,324	Feneruela	

Christiansand. Ptlm., gals. 14,500 1,715 Ptlm., gals, 86,c23 6,240 Svendborg. Tacks, cs..... Cutlery, cse... Ptim., gals. 120,531 8,437 Iron, pkgs... 11 Hdw., pkgs... 48 Mach'y, pkge. 1 Mf. iron, pkgs. 3 Rotterdam. Hdw., pkgs... 23 248 Mf. iron, pkgs 11 107 Gas fixt, pgs. 14 582 Pumps, pkgs. 8 1,194 China. Bristol. Stmpware,cse : Mach'y, cse... :

Hdw., pkgs... s s73 Japan. Bremen. Ptlm., gals 448,740 48,490 Mf. iron, pkgs 8 160 Ptim, gls.1,757,573 141,678 Mf. iron, pkgs 7 253 Naph, gals.151,803 10,626 Hdw., pkgs... 119 2,312 Ag. imp., pkgs 163 2,450 French West Indies. Mf. iron, pkgs. 7 38 Pdm., gals...17,500 8,137 Sew. ma., cs. 8 50 I. r. gds., cse. 1 172 Antwerp. Hdw., pkgs... 8 Bordeaue. Plymouth.

W. mills, cs... 134 1,000 Mach'y, cs... 4 90 Ptlm., gals. 198,973 15,550 Leith. Blaye. Hdw. pkgs... 25 2,500 Ptlm., gals.205,790 13,765 Gibraltar. Havre. Mach'y, pkge. 1 5 Ptim., gals.424,470 31,052 Pti

Ptlm., gals. 192,60e 15,30s Mewico. Queenstown. Pilm., gals...34,930 3,849
Cartridges, os 17 462
Ag. fmp., plags 145 7,319
Mf. iron, plags 84 3,508
Tinfoil, cs... 8 651
Cutlery, cs... 133 4951
W. gds., plags. 4 144
Ciccles, bxs... 25 733
Revolvers, cs. 4 550 Ptlm., gals. 139.574 10,500 Liverpool. Hdw., cse ... 51 1,544 Pumps, pkge. 1 39 S. rollers, cs. 4 116 Needles, cse .. 1 731 4 116 1 731 3 130 3 36 15 700 439 9,906 13 1,000 497 7,126 28 1,176 40 5,111 2 70 6 450 Sew. ma., cs.. Clocks, pkgs. Br. goods, cs.

Hull. Ag. imp.,pkgs 36 Clocks, cs.... 9 London. Ptlm., gals.535,252 45,168 Hdw., pkgs... 156 5,937 Mf. iron. pkgs 19 547 Arms, case... 1 16 Arms, case., r r6 Sew. ma., cs. 425 8,500 Pib. traps,pgs r6 225 Sew. ms., cs. 187 5,469

Sew. ms., cst. 187 5,469
Pumps, pkgs. 7 575
Platinum, cs. 3 522
Thermo., cse. 1 232
Naph., gals. 289,652 17,764
Clocks, bxs. 317 7,708
Ag, mp., pkgs. tao9 31,044
Ore, bbl ... 1 3
Oartridge, cs 3 196
Mach'y, cs. 119 3,797 Iron bridge... Iron, pkgs... Cutlery, ce... Ptlm., gals... Sew. ma., cs.. Marseilles. Agl. imp,pkgs 8 740 Brisiah West Indies. Iron, pkgs... 14 Mf. iron, pkgs. 13 Hach y, pkgs. 13 L r, gds., ces. 1 Clocks, bks... 4 Pilm., gals...25,241 Sew. ma., ca... 6 Hdw., pkgs... 13 Revolvers, cs... 3 Ag. imp., pkgs... 3 147 1,442

Ag. imp., pkgs 5 Clocks, cs.... British Honduras. I. r. gds., pge. s Hdw., pkgs. 19 Ptlm., gals. 4470 Sew. ma., cs. 6 54 973 551 170 British East Indies. Ptlm., gais. 400,000 45,000 British North Amer-Arms, cs.... Clocks, pkgs. toan Colonies. Copper, crate Mf. Iron, pkgs Sew. ma., cm.. Cutlery, cs...

Ptlm., gals .. 12,500 1,300 Brazil. Ptim , gals 175,000 20,184
Pumps, pkgs. 17 416
Hdw., pkgs. 18 355
Rope, pkgs. 24 1,050
Mf. iron,pkgs. 36 5,750
Mach y, os. 16 5,755
Clocks, pkgs. 53 1,833
Brake fixt,pgs 15 1,270
Cutlery, os. 5 300 Cutlery, cs... 5 300 Naph., gals...7105 1,200 Iron safe.... 1 75 British Australia.

Pdim., gais. 156,320 20,384 Naila, kogs... 296 1,847 Pumps, pkgs. 13 4,605 Clocks, bxs... 201 4,440 Mf. iron, pkgs 27 707 Sew. ma. cs. 444 8,514 Hdw., pkgs... 155 15,60a Ag. imp., pkgs 3 1,385 Mach'y, cs... 24 1,378 Mach'y, cs... 24 1,378 Tacks, cs.... 5 85 Clocks, cs... 6 132 British Possessions Ptlm., gals.101,260 10,632 in Africa.

Ptim., gals..22,500 2,450 Pumps, pkgs. 1 75 Mf. iron, pkgs 325 3,213 Ag. imp, pkgs 33 415 Hdw., pkgs... 59 413 Ptlm., gals. 165,037 11.55 Hdw., pkgs.. 16 557 Sew. ma., cs.. 251 3,000 British Guiana. Ptlm., gals...20,900 2,538

Naples. New Zealand. Ag. imp., pgs 15 175 Ag. imp.,phgs 6 126 Catenia. Mf. kron, phgs 3 65 Hdw., phgs... 11 310 Clocks, box... 1

#### IMPORTS

Of Hardware, Iron, Steel and Metals into the Port of New York, for the Week ending Feb. 8, 1882 :

Bardware. Benham, Pickering & Co Feed-valve, chests, 2 Berbecker, J. & Co. Cases, 30 Boker Hermann & Co. Hdw. Cutlery and Guns, pkgs., 93 Dolge Alfred Cases, 10 Drexel, Morgan & Co. Cutlery, cs., 8 Duval H. R. Cases, 4 Field Alfred & Co. Cutlery, os., 8

Field Alfred & Co.
Cutlery, cs., 8
Chains, clss., 213
Folsom H. & D.
Arms, cs., 15
Friedburger, L. S. & Co.
Case, 7
Graef Cutlery Co.
Cutlery, cs., 7
Hempstead O. U & Son,
Arms, cs., 12
Hensel, Bruckmann &
Lorbacher,
Machinery, cs., 25
Howard Bros. & Read,
Cases, 7
Kursheedt Mfg. Co.
Machinery, cs., 8
King, Hesseliah

35x 15 99 Machinery, cs King, Herekiah Cases, 3 Casks, 5 McGregor J. Machinery, pk 48a Machinery, pkgs., 3
63 Meyer, Robert & Co.
66 Machinery, pkgs., 9
Moores' Sons J. P.
Arma, cs., 10
Guns, cs., 5
Mulford, Carey & Conklin
Casks

Casks, 2 Nails, bags, 200 Cases, 200 aan C. M. & Bros. Moseman C. M. & Br Cheese, 3 Mose F. W. Files, cks., 6 Merchaate' Dis. Co. Nails, bales., 6 Cutlery, case, 1 Montgomery & Co. Casks, 2 Oberadorfor, Ph. Package, 1 Schoverling, Daly Gales, Gune, cs., 13

Ag. imp.,pkgs 381 11,960 Gales,
Guns, cs., 12
Guns, cs., 12
Steglich & Baese,
Mach y, pkgs., 35
Steinhardt, A. & Bros.
Cases, 7
Thompson, John
Cases, 2
Vom Cleff & Co.
Hdw. and Cutlery,
Cass, 35
Ward, Asline
Cass, 1

Vard. Asline
Casks, 1
Cases, 3
Cuses, 3
Cutlery, cs., 10
Wiebusch, Hilger & Co.
Outlery and Hardware, pigs., 134
Witte John G. & Bro.
Cutlery, cs., 11
Order,
Cutlery, cs., 13
Mach'y, pags., 99
Guns, cs., 64
Cases, 6.
Hairpins, cs., 6 4:953 144 733 550 1,008

Cullery, 0s. 133 4.953
W. gds., pkgs. 4 144
Clocks, brs. 2 5 733
Revolvers, 6s. 3 550
Barrows, pkgs 50 1,058
L'motive, pgs. 114 33,190
Pistols, 6s. 7 1,511
Hdw., pkge. 368 10,328
Steel rails. 262 1,850
Metal keys. 160 337
Spikes, kege. 93 115
Sew.ma., ol., 0s. 3 30
Lr. gds., pkgs 4 15,
Sew.ma., ol., 0s. 3 30
Lr. gds., pkgs 4 15,
Sew.ma., ol., 0s. 3 11,28
Arms, 0s. 41 1,128
Arms, 0s. 41 1,128
Arms, 0s. 15 4,036
Tacks, 6s. 27 758
Nails, kegs. 41 938
Nails, cos. 40 302
Cop. gde., pgs 13 1,073
H'dlights, 6s. 3 216
R. Gars. 31 14,486
A. brakes, pgs 19 2,166
Pumps, pkgs. 49 78
Car springs. 120 1,150
Mach'y, 0s. 254 16,941
Eentral America. Baring Bros. & Co.
Rods, pkgs., q284
Bars, 1465
Pig. tons, 10
Brown Bros. & Co.
Rods, pkgs., 384
Tubes, 638
Coils wire rods, 762
Swedish bars, 3725
Carey & Moen,
Bundles, 47 Bundles, 47 Coddington T. B. & Co. Sheet iron, bxs., 21 Crocker Bros.

Crocker Bros.
Pig, tons, s85
Duval H. R.
Forgings for axles,
so.
Gt. Western Disp. Co.
Wire. Coile, 1402
Hopo, Adam & Co.
Tubes, 636
Hollway Bros.
Ore, tons, 303
Howard Bros. & Read Central America. 1 30,890 535 Ore, tons, 303
851 Howard Bros. & Read
950 Wire rods, cks., 6
17 Fig. tons, 40
17 Fig. tons, 40
18 The roll of Mig. Co.
Sheet iron, bdls., s68
Milliken & Smith,
Wire, bdls., 1267
Mason John W. & Co.
Wire rope, coils, 3
McConviii, dohn & Co.
Misse, pkgs., 8
Meyer, G. & A. E.
Oxide, bdls., 50
Morton, Bliss & Co.
Rails (kg., 507,106)

Ptlm., gals. 110,000 12,000 United States of Co-Rails, \$494 Scrap iron, tons, Hdw., pkge. 191 4,433
Nalls, kegs. ... 102 497
Revolves, cs. s 225
Az, imp., pkgs s 8 463
Mf. steel, pgs 45 1,835
Mach'y, cs. 24 4,352
Pdm., gais. ... 1297 244
Iron, bdis. 964 9,163
Zinc, caeks 4 218
Arms, cs. 7 402 Naylor, Benson & Co.

Uruguay.

lombia

Glasgow.

Mf. iron, pkgs 13 Hdw., pkgs... 20 Cartridges, cse 1 Mach'y, cs... 10 Clooks, bxs... 90 Needles, case. 1

Pumps, pkgs. Outlery, case. Ag. imp., pkgs Sew. ma., cse.

Cadis.

Ptim. gals .. 65, 964 7,50

Alexandria.

Ptlm., gls.. 298,600 \$9.951

Piraus.

Possuoli.

Genoa.

Clooks, bxs... 16 Guns, case.... 1

A dull Coal market, with prices hardly maintained—these few words afford a com-plete epitome of the present situation. Deal-ers and operators would have it understood that the Anthracite trade is only going through the experience usual at this season, only going but the disinterested observer makes a com but the disinterested observer makes a comparison with corresponding dates last year, which is not so favorable. The "ethereal mildness" of yesterday, for example, and consequent light demand for fuel, makes itself felt in trade channels, in sharp contrast with the conditions prevailing a year ago. The half-time programme, now in effect in the mining regions, to restrict supplies and prevent a glut at shipping points, will brace the market through the remainder of February. As prices go, to quote figures would be misleading, though circular rates are nominally adhered to.

In Bituminous coal there is no change; \$5.10 @ \$5.25, alongside in New York, is the rate, for Cumberland and Clearfield. The freight rate from Baltimore to New York is

Eastern freights are very slack and the ason given is, no orders. Shippers speak of business as much better one year ago. The rate to Boston is \$1.50; Providence, 90¢ (a) \$1. An agitation has been begun under the auspices of the Miners' Association and Knights of Labor, two trades unions in the bituminous region of Western Pennsylvania, for an increase of wages and against the rules of the coal companies, and an element of disturbance is thus introduced for which no calculation can be made. The total ton-nage of anthracite coal from all the regions 15 for the week ending Jan. 28, amounted to

Bars, 1847 Bundles, 79 Pacific Mail Steamship Co Flanged from, cheets, Robertson, Jas. & Co. Tubes, 116 Williamson Jas. Pig. tone, 300 Wood, Niebular & Co. Wire, bdla, 98 Pigs, 2152 Old chains, kg., 412,-590 Ore, tons, 738 Nail rods, bals., 206 Nail roels, bells., ±06 Spisged, tons, ±08 Fish plates, tons, 556 Hoop iron, bells., 998 Sowap, tons, 1630 Sheet iron, bells., 598 Sheet iron, bells., 598 Rails, 7238 Angle iron, bars, 338 Wire rods, bdls., 5749 Old rails, tons, 7450 Old rails, pos, 9690 Bods, plages, 14,638 Bars, 390

Steel.

Abbott Jere, & Co.
Coils wire rods in
bdls., 137 bdls., 197
Cases. 4
Brown Wm.
Bundles, 198
Brown Bros. & Os.
Wire, rings, 1680
Casey & Moen
Casey & Moen
Cases, 198
Buval H. R.
Blands, 6
Draxel, Morgan & Co.
Blooms, 189
Hoe Henry

Blooms, 1179
Hoe Henry
Pins, 08., 2
Knoblauch & Lichtenstein,
Blooms, 975
Kunhardt & Uo.
Bars, 5
Montgomery & Co.
Bundles, 45 © o.
Bandle, 45 © o.
Bands, 67
Moss F. W.
Bars, 14

Bars, 14 Cask, 1 unders Bros. Blooms, 26 Blooms, 2644
Woodford W. O.
Bundles, 192
Bars, 10
Cases, 22
Plates, 248
Order.

er, Blooms, 1170 Bands, 125
Bands, 125
Bods, eoils, 3715
Rods, eoils, 3715
Rods, bdls, 100
Bundles, 1076
Strips, cks., 20
Sorap, cask., 1
Fongings, 36
Wire, pkgs., 2141
Wire, cases, 2

Metale.

Alexander F. & Sons Antimory, eks., 10
Ashby Morris,
Zinc, es., 7
Coddington T. E.
Tin plates, bxs., 50
Bundles, 31
Dickercon, Van Dusen
& Co.
Tin vlotes bys.

Dickerson, Van Dusen & Co.
Tin plates, bxz., 257
Drexel, Morgan & Co.
Tin plates, bxz., 444
Kunhardt & Co.
Tin plates, bxz., 444
Kunhardt & Co.
Tin plates, bxz., 47
Keppelmann, Adolph
Lead, 66, 3
Lead, bdls., 28
Lead, bdls

Yellow metal, es. 150 Wallach Willy Copper sheets, cs., e Windmuller & Roelker, Sheet sine, oks., 11 Order, Tin plates, bre.,

7342
Tin plates and taggers, 904
Spelter, plates, 2006
Spelter, ingots, 2434
Spelter, pkgu., 16,-Zinc plates, 7840 Old copper, bxs., 8, Old copper, pkgs., 2, Old brass, bdls., 4

COAL.

318,327 tons, against 314,752 tons in the cornding week last year, an increase of tons. The total amount of anthracite 3575 tons. The total amount of anthracite mined for the year is 1,653,283 tons, against 1,526,481 tons for the same period last year.
The total amount of bituminous mined for the year is 306,310 tons, against 236,028 tons for the company. for the corresponding period last year.

#### PHILADELPHIA.

Philadelphia, Feb. 7, 1882. Pig Iron.—The movement during the week has been very light, but prices are steady and unchanged. In some departments of trade prices are inclined to weakness, although Pig is but slightly affected, and it would be a matter of extreme difficulty to obtain concessions on any of the standard makes. Some who were aspiring to fancy figures have modified their ideas a little, but as a rule there is a steady market, with very little prospect of lower prices and, as we have intimated, not so much desire to push for an advance as there was some time ago. There is nothing positive in the outlook, however, except that consumption is likely to be large and prices in all probability without much change in either direction. The chances are so evenly balanced that there are, in fact, very few willing to speculate on either side of the market. It is not surprising, therefore, that with so large a business parties are anx ious to catch the first indication of a change, so that they may trim their sails accordingly.

Advocates on both sides have a fair case as matters stand, but the evidence is not sufficient to warrant decided action. The trade in its various aspects has been discussed in these columns, from week to week, and there has been nothing of importance developed requiring additional comment, so far as we can see. Ores are a little dearer, and the tendency is toward higher cost all around. Stocks are light, and with prospects of a more stocks are light, and with prospects of a more active demand as spring approaches, furnace, men appear to have good and sufficient grounds for holding firmly to quoted rates. The disposition to advance, however, is held in check by the weakness in foreign markets and the heavy stocks held in Great Britain. It is quite likely that the course of affairs will be decided eventually by two influences, viz: the condition of European markets and our crop prospects. If both these should develop favorably, higher prices may be regarded as certain, while contrary developments would be equally certain to bring lower-prices. All departments are actively, and it is believed profitably, employed, so that the future is not endangered by speculative contracts, and whatever changes there may be in the immediate future are likely to be the result of circumstances outside of the American Iron trade. Sales during the week have been made at about the following prices, have been made at about the following prices, f. o. b. cars at furnace: No. I Foundry, \$24.50 @ \$26: No. 2, \$23 @ \$23.50—business largely at the inside rates; Gray Forge, \$22.50 @ \$23; Mottled, \$21 @ \$21.50, and White, at \$20 @ \$20.50

Foreign Iron.-Bessemer is irregular, and hard to quote with anything like ac-curacy. Holders are asking \$27, but sales have been made at \$26, and from that to \$26.50, according to date of shipment, is prob-ably a fair quotation at which business can be done. Prices are gradually settling down and in spite of the high rates of freights, buyers find the tendency of the market in their favor. There is not much disposition to buy, however, and it would probably not reour much demand to start prices on the up track again, so that quotations need to be revised almost daily. Middlesboro' Iron is quite neglected. Lots in store are available at about \$21.50, but there is scarcely any demand for it at present.

Muck Bars .- The market is slightly easier, and sales have been made at \$46.50 @ \$47, with sellers at \$46.50 @ \$47.50. The demand is moderately active, but prices are onsidered high.

Blooms,-There is no change to report and sales are made at about the following rates, viz: Charcoal Blooms, \$75; Run-out Anthracite, \$62.50 @ \$65; Scrap Blooms, \$55, and Northern Ore Blooms, \$50.

Bar Iron .- The demand is still heavy, but prices are not quite as strong as they were some time ago. There is no difficulty in getting 2.8 f @ 2.85 f for Refined Iron, but the upward tendency has been checked, and there is besides a good deal of inferior iron offering, which has its effect on the market. All the mills are running full with a ket. All the mills are running full with a fair amount of orders to complete, but new business is not offering in such quantities as was noticeable a few weeks ago. There is no reason to anticipate any scarcity of busibecause of diminished consumption but rather because there is less fear of higher prices. There are a good many large orders waiting for favorable opportunities of placing them, but as yet there is little prospect of anything being done at less than 2.8¢ for Refined Iron. The store price has been advanced to 3¢, and a fair business is reported from all classes of consumers.

Plate and Tank Iron .- The market is dull, and manufacturers are ready to take enders at quoted prices, and would probably grant concessions if the specification was a specially desirable one. The mills have specially desirable one. work enough on hand to carry them pretty well into next month, besides which there i a very fair demand for small lots for current delivery, so that prospects are fair, although not as bright as they were some time ago. Prices are unchanged, viz.: Tank Iron, 3.5¢; Radned at 3.75¢; Shell at 4¢; Flange at 5.25¢ @ 5.50¢, and Firebox at 6.25¢ @

Structural Iron.-Business is quite ac tive, some large orders having been entered within the past two or three weeks. Pros-pects in this branch of business are particularly bright, and prices are very firm—say Angles, 3.25¢; Beams, 4¢; Channels, 4.2¢ Tees, 4.3¢, and Bridge Plates about 3.5¢.

Sheet Iron.-There is no change report, a fair business being done at steady

and unchanged prices, viz. :	
Common Sheet, No. 27 and 28	5%1
Common Sheet, No. 26	50
Sommon Sheet, No. 22 to 25	474
Common Chaet No 16 to 11	4 564
Best Redned We a We advance on the at	eove.
Best Bloom Sheets, No. 26 to 28	70

Wrought Iron Pipe.-There is a good demand for Boiler Tubes, which are steady row, but nothing of public importance is at 37½ 4 discount from price list. Gas and likely to be transacted. Steam Pipe is quoted 55 @ 571/2 % discount, with fair demand.

Steel Rails.—A somewhat improved demand is noticeable, although prices are a shade easier. Several orders have been taken during the week for lots of 2500 to 3000 tons each, at prices varying from \$57 to \$55 at mill. Larger lots, with deliveries at sellers' convenience, could probably be had on more favorable terms. For the time on more lavorable terms. For the time being the outlook indicates \$55 @ \$58 as the extreme limits in both directions, and prospects of increasing demand. These figures are prohibitory as regards foreign Rails, and there is every probability that the entire demand hereafter will be met from domestic

Steel Blooms .- There is scarcely any thing doing and quotations are entirely nominal at \$46, duty paid, or £6. 12/6, c. i. f. Sales from second hands have been made at materially lower prices than above quoted.

Iron Rails .- There is no demand of any importance, and quotations are entirely nominal. Light Rails are in good demand and command \$49 @ \$52, according to weight, but 56's are offered at \$48.50 without meeting any response from buyers; a lot of 60's sold

Railway Fastenings .- Spikes are quiet, and prices a shade easier, say \$3.10 @ \$3.15 Manufacturers have plenty of orders on hand out new business is comparatively scarce.

Old Rails.—The market is dull, and prices a shade lower. Tees have been sold at \$30.50 and are offered at same price withat \$30.50 and are offered at same price with-out finding buyers. Buyers appear to be fairly supplied for the present and are not inclined to make offers for further supplies. Doubles are scarce, and would sell to a limited extent at \$32 or probably \$32.50.

Crop Ends—Are dull and lower, offered at \$27.50 without attracting attention.

Scrap Iron.-The market is quiet, with foreign offered at about \$32 @ \$32.50 and No. 1 American at \$33 @ \$34. Buyers dis-criminate closely as regards quality, and will take none but choice lots at the above rates.

Nails-Are very active and in light supply. Prices are unchanged—say, \$3.40 as the net wholesale quotation.

#### PITTSBURGH

Office of The Iron Age, 77 Fourth Avenue, | PITTSBURGH, PA., Feb. 7, 1882.

The general Iron trade has been comparatively quiet during the past week. It must not be inferred from this that there has been any falling off in business, for such is not the case. Every mill and furnace hereabouts is taxed to its utmost capacity, but the ac-tion of the last meeting of the Western Iron tion of the last meeting of the Western Iron Association in putting a quietus on the matter of pushing up prices, for the present at least, has had the effect to quiet the market, and the trade generally admit now that it was the best thing that could have been done under the circumstances. While it is admitted that raw Iron is higher proportionately than the products, and that the margin for profit on the latter is small, it is feared that an advance would stimulate foreign importations, which would in all probability lead to a collapse in the American Iron trade similar to that of a couple or three years ago. The indications at present point to an ago. The indications at present point to an active spring and summer trade. There is no abatement in the demand for all kinds of Finished Iron, and the same is true of the rate. Sheet, Plate and Tank, which lateral ago.

ceipts are heavy, but the great proportion of the iron now coming forward was contracted for some time ago, and could not be delivered for want of cars. Hence, while the arrivals are large, there is no accumulation in sale yards, and there is no apparent increase in the offerings. Yet, with stocks in mill yards the offerings. Yet, with stocks in mill yards increasing, the demand, as might be expected, is less urgent, and an easier tone character-izes the market in consequence. Forge Iron may be fairly quoted at \$25.50, cash, to \$26.50, 4 mos., and Foundry grades at \$25.50 @ \$27.50, 4 mos. We can report a sale of @ \$27.50, 4 mos. We can report a sale of 300 tons Bessemer at \$29, 4 mos.; also a smaller lot at \$30, 4 mos., but the latter is an outside quotation.

Muck Bars .- There is considerable doing and the market appears to be steady at former prices. We can report sales at \$45.50 former prices. We can report sales at \$45.50 (@ \$46.50, cash, at mill. At \$45 (@ \$45.50 there is no trouble in making sales, but buyers, to use a common phrase, do a good deal of "kicking" when asked above th figures, although we are cognizant of a sale having been made no later than yesterday at our outside quotations, \$46.50.

Manufactured Iron.-The situation dif Manufactured fron.—The situation dif-fers very little from that of a week ago. The mills are all busy, and the policy of refusing to contract for future delivery at any fixed prices is, so far as we can learn, being closely dhered to. There is to be another meeting of the Western Iron Association next week, the special object of which is to consider prices, but the probability is that the result will be the same as at the two former meet-We repeat former quotations: 2.50¢ ngs. nga. We repeat former quotations: 2.50¢ rates for Merchant Bars; Sheet, 4.30¢ for No. 24; Tank, 3.30¢; Boiler Plate, 5¾ ¢ @ 7¼ ¢. Skelp Iron, a specialty, is easier, and we now quote at 3¢ @ 3.10¢.

Nails. -There is a continued fair degree

cash. The regular monthly meeting of the in the near future. We quote: No. 1 Foun-Western Nail Association takes place to-mordry, \$25 @ \$27; No. 2 Foundry, \$22 @ \$24;

> Wrought Iron Pipe.—The demand has fallen off somewhat, as it always does at this season of the year, but some of the mills are still pretty well employed working up old contracts. No change in card or discounts. contracts. No change in card or discounts. Discount on Gas and Steam Pipe, 55 @ 57½ % on Boiler Tubes, 37½ % @ 40% off; Oil-well Casing, 85¢ % foot, net; ditto Tubing, 25¢ % foot, net. Notwithstanding the low price of oil, new wells are still being put down, and the demand for oil-well supplies keeps up better than one would imagine. better than one would imagine.

> Rails, &c .- The market for Steel Rails, in sympathy with reports from other points, is easier, although the mills here are in good shape, having contracts for all they can make for several months ahead. Railway can Spikes are higher. We now quote at \$3.15, 30 days, for round lots, and \$3.25 in a jobbing

> way. Splice Bars, \$2.70 @ \$2.80, and \$4.20 \$4.25 for Track Bolts.
>
> Steel.--Prices are higher, having been advanced at the recent meeting of the National Steel Association in New York. Best brands of refined Cast Steel 12¢; ditto Crucible Machinery, ¾ @ 2 inches round, 8¢; ditto Plow Steel in slabs, 6½ ¢.; Bessemer Spring Steel, 4½¢; Open-hearth ditto, 4½¢; Open-hearth Plow Steel, 4½¢.

Wrought Trimmings, \$22 @ \$23.

Coke.—Prices remain as last quoted, \$1.75 P ton, free on cars at ovens, and \$1.90 @ \$2 for small foundry orders.

#### CHICAGO.

Office of The Iron Age, 36 and 38 Clark Street, cor. Lake Street, Cincaco, Feb. 6, 1882. Pig Iron.—Although purchasers of Char-

coal Iron show less disposition to anticipate their wants than of late, no perceptible change can be said to have taken place in the total amount of business done, and the market continues strong. We learn of a sale

Steel.—As intimated in our last quotations, Tool Spring and Plow Steels have taken an upward turn to the extent of ½¢ ½ ½ ½ ½ ½ ½. The demand generally is good, and quotations as given are firm. We quote: Tool, 12¢; Machinery, O. H., 5½¢; Crucible Machinery, 7¢; Hammer, 2 inches and under, 8¢; over 2 inches, 9¢; Cast Spring, 7¢, and O. H. Spring, Tire and Sleigh 7¢, and O. H. Spring, Tire and Sleigh 100 of the control of t under, 57, and O. H. Spring, Tire and Sleigh Shoe, 5¢. Sheet, first, second and third quality, 12¢, 10½¢ and 8½¢, respectively; Crucible Plow, 6¾¢; Eagle Plow, 5½¢; Iron Center Plow, 10¼¢, and soft Steel Center Plow,

Serap Iron.-This market is somewhat The demand is dull, and prices on Wrought, Cast and Stove Plate declined on wrought, Cast and Stove Plate declined \$1 \$\frac{1}{2}\$ ton, We quote (dealers' purchasing prices); No. I Wrought Scrap, \$24, net ton; No. I Railroad Scrap, \$28 @ \$29; ditto Heavy Cust, \$19; ditto Stove Plate, \$14; ditto Cast Iron Borings, \$5 @ \$9, and ditto Machine Shop Turnings, \$12 @ \$13.

#### CHATTANOOGA.

Office of The Iron Age. Market and 8th 8m., CHATTANOODA, Feb. 6, 1882.

Business is quiet. There is a feeling of caution that has been perceptible since the flurry in Paris, and it extends to all lines of trade. There is no falling off in prices; in fact, the business of all lines of heavy and general merchandise is remarkable considering the season. The weather has been ax-tremely unfavorable during the week, opening with a disagreeable snow storm and ending with a drizzling rain. The damage to Southern properties by flood has not been considerable. In this, as usual in such cases, the disasters have been greatly exaggerated.

Pig Iron.-There is nothing of consequence in the metal market, except that proGray Forge, \$20 @ \$21; White and Mottled, \$19 @ \$20; Car-wheel Metal, \$38 @ \$40.

Ores .- Are plentiful at the usual rate, and e continue to quote: 50% Brown Hematite, ton, \$2 @ \$2.75; Red Fossil, \$2 @ \$2.25, elivered at furnace.

Miscellaneous Articles.-There is little doing in Old Rails, because of lack of stock. We quote them at \$29. Wrought Scrap, \$24 @ \$27; Cast Scrap, \$14 @ \$17: Old Wheels, \$29 @ \$31.

Nails.—We quote at \$3.40 rates. The building business, thought hindered by the unfavorable weather, continues to absorb large amounts, and prices are very firm.

Manufactured Iron.—Bar we quote at \$2.75 rates; Railroad Spikes, \$3.30; Track Bolts, \$4.25; Fish Plate, \$3.

Coal.—We make a further reduction in household Coals. Fancy Lump, \$4.50; Com-mon, \$3.75; run of mine, at mills, \$2. Coke.—Furnace Coke, \$3 at point of con-amption; Foundry, 100 @ 120 @ bushel.

Steel and Iron Rails.—Steel Bars, \$62 \$64 at mill; Iron, \$50 @ \$52; Small, \$57 \$60

#### BOSTON.

\$33 @ \$35 % per net ton for ordinary to selected Railroad. Crop Ends are offered at \$30 % gross ton; Old Car Wheels, \$31 @ \$32 gross; Cast Borings, \$16 @ \$17; Old Car Springs and Axles, \$38 @ \$40 20 red. FEBRUARY 4. - The market has presented a not, however, show signs of weakness, and full prices are generally paid, and in some cases when a particular brand is urgently needed a price higher than our quotations is paid. There is not much Iron offering, and the supply and demand are about even.

Some brands cannot be obtained as promptly as wanted for delivery but, however, little as wanted for delivery, but, however, little difficulty would be experienced in obtaining all that is actually needed. Buyers are moving all that is actually needed. Buyers are moving in a cautious manner, which shows their disbelief in higher prices. We quote: Prices at ahipping ports for American Pig are \$26.50 any margin for profit. Coal affoat is only bringing 9¢ at Cincinnati, whereas the cost for mining is 4¢.

Window Glass.—There was a meeting of the Western Window Glass Association in this city last week, at which discounts were fixed at 60 and 20 % on single strength, for carload lots, and 70 and 5 % on double strength. as wanted for delivery, but, however, little quote Eglinton at \$24 @ \$25 for moderate-sized lots; Langloan, \$27 @ \$28; Gartsherrie, \$26.50; Carnbroe, \$25 @ \$2.50; Clarrence, \$25 @ \$2.50; Clarrence, \$25 @ \$2.50; Clarence No. 3, \$22 @ 23; Shotts, \$27.50. Old Rails.—A considerably firmer feeling has been developed in Old Rails, and we quote \$32 for American. Foreign Rails are almost entirely out of the market. Manufactured love. Manufactured to a Ma market. Manufactured Iron. - Manufactured Iron continues in active and steady request for Bar and Plate, but Sheet Iron is quiet. Nails and Horse Shoes are in good demand. Nails and Horse Shows are in San Prices are steady. Ear Iron.—The mills are still behind on orders, and the demand from the store continues active, and stocks are only in a fair position. The quotation remains firm at \$3. Horse Shoes are very scarce at from \$5 to \$5.50. Norway and Swedish are in good demand, and very firm at \$4.25 for Bars, and \$5 @ \$5.25 for Shapes. Plate Iron.—The demand for Plate Iron still continues good, and the mills are working steadily on orders, though delivery is some what better. We quote Tank at \$3.60; Refined at \$4; Shell at \$4.45; Flange at \$5.45. Tubes are selling 40 % off from the list. Sheet Iron.—The market has been dull and active spring and summer trade. There is no abatement in the demand for all kinds of Finished Iron, and the same is true of the raw article, and our mill and furnace men, if so disposed, could book orders to absorb their production for some months to come. The policy of the trade generally is to keep their business well in hand, to make but few contracts for future delivery, and thereby prevent speculation and at the same time keep themselves in position to take advantage of an advance, in the event of one being established.

Pig Iron.—Business has been remarkably quiet the past week, but it was owing as much to a soarcity of good Iron as anything eight of as active so it has been, it is owing largely to as active as the as been, it is owing largely to as a contract of the trade generally is to keep their business well in hand, to make but few contracts for future delivery, and thereby prevent speculation and at the same time keep themselves in position to take advantage of an advance, in the event of one being established.

Pig Iron.—Business has been remarkably quiet the past week, but it was owing as much to a soarcity of good Iron as anything eight of as active so the season than the same time and was proved the past week, but it was owing as good as the past week, but it was owing as follows: \$3.45 mll.

Natis.—Sales continue large. The ruling eight of the season the past week hear of a lot offered at 19/45, the combination prices of Manufactured Copper are unchanged. We quote: Sheathing, 29/5; Braderia.

Steel.—As intimated in our last quotations of the season of a lot offered at 19/45, the combination prices of Manufactured Copper are unchanged. We quote: Sheathing, 29/5; Braderia. changed. We quote: Sheathing, 28¢; Braziers, 30¢ @ 32¢; Bolt, 30¢; Copper Bottoms, 31¢ @ 32¢; American Yellow Sheathing Metal, 20¢; Yellow Metal Bolt, 22¢; English Yellow Sheathing Metal, 16¢ in bond. Lead. - Lead has been firm and a fair jobbing demand has ruled. We quote \$5.15 for car-load lots delivered in Boston. Manufacturers prices are unchanged. We quote: Bar, 61/4¢ Pipe, 71/4; Sheet, 8¢; Tin-land Pipe, 15¢ Tin Pipe, 35¢—all less 10%. Spetter.—Spetter has remained unchanged at 6¢ for carload has remained unchanged at 6g for carioad lots. Sheet Zine is in fair request at 8g.

Tin.—The market has been in a nominal position here, but has fluctuated considerably in London, dropping from first to fice, but it has now recovered to about from market, and have additionally in the London market, and has sold down to £113. 4/, but is now quoted at £113. 10/. Large lots could probably be bought at from 24/2¢ to 24/4¢, and jobbing lots at 25/4¢. Tin Pictos.—The market has been a little duller. Cokes are easy. ket has been a little duller.

We quote: Charcoal Bright, \$6.75 @ \$
Ternes at \$6 @ \$8; Ookes, \$5.75 @ \$6; di
Tarnes, \$5.50 @ \$5.75. Old Iron.—No. Ternes at \$5 @ \$5; Codes, \$5,75 @ \$0; ditto Ternes, \$5.50 @ \$5.75. Old Iron.—No. 1 Wrought is selling readily at \$1.50. Light Iron is dull, and it is hard to find buyers for it even at 60%. The value of light Iron always used to be considered half the price of No. 1, and on that basis it ought to be worth 75\$ to-day. It is such bulky stuff that few dealers are inclined to store up much of it in the city; but back in the country where storage room is cheap, there would seem to be some inducement for holding light Iron out of the market. Machinery is meeting with a good inquiry at \$1 @ \$1.05, and Stove

rought, No. 1	8 @ \$1.90
light	55 60 60
Horseshoes	@ 1.60
Hoops	90 (6 - 95
Cotton-tie Buckles	2.50
Car Wheels, per ton	30.00 (0) 31 00
Oar Axles	@ 1%
Spring Bleel,	1% @ 1%
Serap Mees	1.25 0 1.75
Stove Plate	B to!

Machinery	Y											,		0 1	,		8	.04	0	1.0
A CAL STREET, S. P.	AA LOF	W.	ΙE															60	0	86
I UPDARAGE.	CHARL																		9	59
Malleable	Fron.				٠	 . 0	٠	۰	4	b	9				4	0		45	9	59
Hurnt Iro  -Comen	n			0	 	٠						ŧ	9					gro		44

#### CINCINNATI.

FFBRUARY 6.—Pig Iron.—During the past week the market has been quiet but firm in prices. Consumers are in no hurry to stock up for the season, preferring to wait for further developments. The unconsumed stocks are comparatively small, and it is known that the output from furnaces will be no larger than last year, and it is generally conceded in all quarters that the domand for consumption will be as large if not larger; this gives a strong turn to the market for all kinds. Sales in the past week justify the this gives a strong turn to the market for all kinds. Sales in the past week justify the following quotations: No. I Hanging Rock Charcoal, \$29.50; No. I Hanging Rock Coke, \$28.50; No. I Furnace Charcoal, \$28.60 \\$28.50; No. I Furnace Charcoal, \$28.60 \\$28.50; No. I Furnace Charcoal, \$28.60 \\$28.50; No. I Stonecoal, \$29.50; Good B. I and 2, \$29; Silver Gray Softeners, No. I, \$26.50; No. S, \$25.50; B. 2 and 3, \$24.50, all 4 most to cars here; special prices are made on all kinds for deliveries from furnaces direct.

#### LOUISVILLE.

Manuns. Ono. H. HULL & Co., Commission Merchants, report to us as follows, under date of Feb. 4, 188s: The market is quiet with only a light demand; prices of Hot-blast Irons, however, are very firm, and in some cases higher than a week ago. Foundry is worth 50¢ @ \$1 \$\ \epsilon\$ ton more. Mill Irons remain about the same, but very firm. Our Wheel Irons are still in light supply with unchanged prices. We quote price of round

POUNTRY ERMAN.		
No. 1 Hanging Rock, Charcoal	#5.00 6	
Coke. No. : Southern, Stonecoal and Coke No. : "American Scotch" Open Silver Gray.	#7.57 66 #6.00 66 #5.50 66	26.50 26.50 26.0
M- (*1		

... \$1.00 @ \$3.50

W. B. BELENAP & Co., Iron and Steel W. B. BELKNAP & Co., Iron and Steel Merchants, Nos. 113 and 115 Main street, report to us as follows, under date of Feb. 4: The market for Finished Iron is unusually steady, and the demand is undoubtedly large: it is one of the healthiest industries we have to report. Some of the mills in Ohio, within the circle of our correspondence, have booked good orders at \$2.55 @ \$2.60, card. Rates here remain unchanged—\$2.70 @ \$2.80 on ordinary lots from store. Sheet is somewhat easier, especially in the lighter numbers. Nails are firm at full card, and we can learn of no concessions obtainable. The fact that building permits in our city for last week were almost four times as great as for may expect when fair weather sets in. note an advance of \$6 \$\ \mathbb{P}\$ ton in Burden
Best Iron Horse Shoes; both Burden and
Juniata are scarce. It is next to impossible to keep up assortments. Trace Chains are higher and very firm at the advance. All

quotations of last week :
HOT BLAST CHARGOAL.
Missouri
COAL AND CORM.
Missouri
MILL TROOM.
Red-short
CAR WEIGHT AND MALLMARGE SHOPS.
Mercandinos

#### RICHMOND.

MR. ASA SNYDER, Iron Merchant and Fw nace Agent, writes as follows under date of Feb. 6, 1882: This market for Pig Iron continues strong, with a fair amount of business transacting. Consumption and production are so nearly balanced that it is difficult to predict the future of the Iron trade. remain unchanged as follows:

9		
No. 1 Sootch Pig Iron	#6,00 Q	28.0
No. 1 Anthracite Pig Iron	87,00 G	36.
No. s		
NG. 3	@	23.5
No. a Virginia Coke Pig Iron		
	80.00 G	
Virginia Charcoal C. B. Wheel Iron.	24.00 (8	29.4
Old Rails.		
Wrought Scrap, No. 1		
Cast Machinery Scrap		
Budned Bar Iron	2.6 63	
Home Shoes (Tredegar)		
ALGEO		7.0

#### BALTIMORE.

W. N. WYERH, Iron and Steel Merchent, 46 and 48 South Charles street, reports us the following, under date of Feb. 6, 1882: Business for the past week has ruled rather less active than for some time past. Stocks, however, are light and much broken, with a proportionate demand for early wants:

Buf. Ber kr	on, 1 to 6 x						¢.
m 10	x 100 456 X 1	194 108	4 3	8 6-es		3	8
56 6	M to	s. Round			_		
	PO						Ø
Hoop Iron.	114 wide an	d upward.,		186	-	186	¢
	from 1 % to		36	8	-	186	Ø.
	kron			MAG	A	4 1	è
	Il Hoda			636	6	6 1	ø
	cond Ones list		1.6		AL.	266	9

on Horse Nails ..... "10 Horse shoes % keg of 100 lbs.... \$-37%

R. C. HOFFMAN & Co., Iron and Commission Merchants, report the Pig Iron market as follows, under date of Feb. 6, 1882: The Iron market for the past week has been quiet; the demand regular and prices unchanged. We quote as follows:

#### Our English Letter.

Review of the British Iron, Steel, Metaand Hardware Trades.

> (From our Regular Correspondent.) LONDON, ENG., Jan. 23, 1882

THE IRON MARKETS THE IRON MARKETS

of Great Britain have not undergone any
particularly important changes since my last
letter to you was penned, and, as a matter of
fact, the general situation is unaltered. In
some respects, nevertheless, there have been
alterations of some little importance—notably
as regards Scotch warrants and makers'
brands of Scotch pig, which are all lower
than last week. Warrants have fallen to
about 51/, owing to the heavy sales of speculators who had bought for the rise, as well as lators who had bought for the rise, as well as on account of the continued dearness money and the financial panic in France. is not stated that the heaviness of stocks has had anything to do with the matter, but I suspect that the continued additions to Con suspect that the continued additions to Con-nal's stores may have led some persons to con-clude that they would do well to realize with-out further delay. Yet another factor in the calculations of those who have an eye to the future may have been the knowledge that under present arrangements the policy of restricting the output in Scotland and in Cleveland will be pursued until March 31 only, after which date it is most probable that nearly or quite thirty additional fur-naces may be blown in. This increment would naturally mean a heavy addition to the present rate of output, and would certainly have a tendency to repress any rise in prices, unless under exceptional conditions which, as yet, are non-existent. Knowing all this speculators are already discounting the coming change, in spite of certain rumors that the limitation in spite of certain rumors that the limitation of production may be kept up for a longer period than the six months dating from Oct.

1, 1881, originally fixed. Having this knowledge, it is important, I think, to bear it in mind that unless something extraordinary should occur in the interval, the production in Cleveland will be augmented by about 7500 tons weekly, and in Scotland by about 7500 tons weekly, and in Scotland by about 3000 tons weekly, after April 1st. As to the probability or otherwise of the ironmasters continuing the restriction I have at present no definite information; hence I do not pretend to prophesy. I am told that some of the Cleveland smelters favor the idea, but I am by no means such as the control of the control of the cleveland smelters favor the idea, but I am by no means such as the control of the cont that they would be a voting majority. Perhaps we may hear more on this head before long. It is pretty certain, nevertheless, that Scotch and Cleveland pigs will never attain much higher values so long as the present enormous stocks are known to be in the background. How these reserves are to be reduced I am not aware, except by means reduced I am not aware, except by means of strictly limiting the output until they shall have shrunk within manageable proportions. This may be very poor political economy from the average free trade standpoint, but I fear there is no other gate open—unless your market should happily come to the rescue and sweep off our surplusage at the rate of 10,000 or 15,000 tons weekly. Of the probabilities in this reour surplusage at the rate of 10,000 or 15,000 tons weekly. Of the probabilities in this respect you are far better informed than my self, so that I need not discuss the matter, but will state my case thus—either a large American demand and resulting higher American demand and resulting higher prices, or lower rates until a larger demand or smaller production reduces the stock in store. From one or other of these two courses there is no escape, either logical or actual. At present shipments to your ports are great! Ampered by the extremely high freights aemanded by ship owners, who justify their charges by the statement that return cargoes are scarce and difficult to get hold of. There has been some talk of chartering steamers for iron alone, but it does not seem to have been followed up, shippers having no particular liking for cargoes of iron only, especially at this season of the year. Sailers have been secured here and there, but their total tomage is not large. there, but their total tonnage is not large.
At present freights are: Pig iron, by ordinary steamers, Glasgow to New York, 20
sked, 17/6 paid; ditto sailers, 15, Glasgow to New York, Philadelphia or Baltimore; asked, 17/6 paid; ditto same of the same o spiegel), Calveston Wharf 20 @ 21/, San Francisco 15/@ 16/. These are all high figures, yet I am informed that the Liverpool rates will be advanced by 2/6? I ton on and after February 1. With more reasonable charges in this respect a large tomage of pigwould doubtless have been shipped to your ports from Midlesbore' and Clasgow during the past few weeks, seeing that there are numerous impriries from your market, and there is an improvious that you could very well take a fair quantity of Scotch and English pag unless existing consumptive conditions. So long as freights are as now, however, the amount of business must needs be restricted, as the c. i. f. quotations render

that the

CHANGES OF THE WEEK

respect of prices and discounts includes the following: Scotch cut nails advanced 10/9 ton; bedstead tubes 20/@30/dearer; Belgian girders and nail rods and German cut nails girders and nail rods and German cut nails and fencing wire firmer at higher rates; Staffordshire and Birmingham cut nails advanced 10/\$\tilde{P}\$ ton on 3-inch and upward, making the price \$\mathcal{L}\_9\$. To/\$\tilde{P}\$ ton; N. Hingley & Sons, Netherton, have advanced their "Netherton Crown" best bars to \$\mathcal{L}\_7\$. To/\$\tilde{P}\$ ton at works. Robert Heath & Sons, of Stoke-upon-Trent, have advanced their prices 10/ per ton. Nettlefolds (Limited), of Birmingham, have withdrawn all previous lists and quotations. Orders for nails, rivets, &c., to pattern, or differing in any way from the sizes and description mentioned in the firm's lists, can only be entered at special prices; an description mentioned in the firm's lists, can only be entered at special prices; an amended price current has been issued by William Whitwell & Co., iron merchant, Stockton-on-Tees, making Merchant bars, crown, £7; best, £7. 10/; best horseshoe, £8; best beet, £8. 10/; rivet, £7. 15/; best rivet, £8. 15/; Thornaby best rivet, £9. 15/; angle iron, crown, £7, 5/; ditto best, £8. 5/; ditto best, £8. 5/; there iron, £8. 5/; special smithing iron, £8. 10/@ £10. 10/. Rylands Brothers (Limited), Warrington, have issued a new list, dated January 12, advancing prices 10/ \$7 ton, and making best iron, plain, o to 6, 12/; \$, 12/9; 12, 15/; 14, 16/\$7 \$7 cwt.; galvanized, \$8, 16/6; and 14, 19/9\$7 cwt.; drawn fencing wire, annealed, o to 6, £10. 10/; \$, £11. 15/; bright or annealed steel, o to 6, £12. 15/; \$, £13. 10/, whether round or oval; plain rolled fencing wire, 6, £9, 10/; drawn killed galvanized telegraph £9. 10/; drawn killed galvanized telegraph wire, 0 to 6, £16; and 8, £17 🛱 ton. Advances in hardwares: Brazed copper and vances in hardwares: Brazed copper and brass tubes, %d. % lb.; stamped tin goods, 5 % on the gross; odd work, 2½ % off discounts, and heavy odd work, 1/ % owt. up; chest-handles, 2½ % off discounts; light washers reduced 2½ in discount; heavy washers advanced odd. % cwt.; stair-rods, 1¼ % discount reduced; patent wrought nails, discounts reduced 2½ %; copper kettles advanced %d. % lb. tles advanced 1/d. 78 fb.

FENCING AND OTHER WIRE

VENCING AND OTHER WIRE
is just at present in great demand, makers
being fully employed in all directions, with
more orders on offer than they can deal with.
They have generally advanced their prices,
both here and in Germany, the producer in
the Fatherland being equally busy. I lear
some complaints as to the quality of European some complaints as to the quality of European fencing wire—English as well as German—from colonial agents here, some of whom state that the quality of certain brands is very poor. As you cannot know too much, I suppose, about your competitors, I give you a selection of prices for various kinds of wire, besides Rylands' leading quotations just mentioned. The Shropshire Iron Company (Limited) quote as under, all less 2½ % for cash, and with 17/6 extra f. o. b. London, or 12/6 extra f. o. b. Liverpool: don, or 12/6 extra f. o. b. Liverpool:

Best Drawn Iron Wire, per cwt.

Best Drawn Iron Wire, per cwt.

B. W. G., No. ... o-6 7 8 0 10 11 12
Bright or Annid. 11/6 12/0 12/3 12/9 13/6 14/0 14/6
Galvanized ... 15/3 15/9 16/0 16/6 17/3 17/9 18/3
B. W. G., No ... 13 14 15 16 17 18 19
Bright or Annid. 43/0 15/6 16/3 17/0 18/0 16/3 26/6
Galvanized ... 18/0 19/3 21/0 21/0 23/9 25/0 26/3
B. W. G., No ... 20 21 22 23 24 25
Bright or Annid. 22/6 24/3 25/0 27/9 22/0 30/6
Galvanized ... 29/0 32/0 34/9 37/0 40/3 44/3
Extras, per owt.—Charcooal, 5/; Tinned, 8/6; Charcoal Tinned, 14/6; Charcoal, half-round, 12/; Coppered Wire, 1/3; Spring Wire Charcoal, 6/; Square Wire, 1/9; cut to lengths, 2/9; Wire in straight lengths, 3/6; drawn to pattern, 5d.; Bessemer Steel, 4/6; Dudley Bagging, 3d.; Cotton, 3d.; Papering, 2d.; Dressing, 2/6. Wound in 1-b and 3-6 hanks, 2/6 per cwt; wound in 1-oz. or 2-02. hanks, 2d. 9 b.

Small Round and Square Bar Iron S. I. Co.,

Small Round and Square Bar Iron S. I. Co., 

in Long Lengths of 1 owt, each. Nos., B. W.G. 0-6 7 8 16. 10/ £16. 10/ £17. Annealed Tinned Bottling Wire.

Best Galvanized Strand, 7-ply.

Best Galvanized Strand, 7-ply.

B. G. W.—Nos. o I 2 3 4 430
Yds. per cwt. 170 824 265 286 526 430
Per cwt. 170 824 265 286 526 430
Per cwt. 17/9 18/3 18/9 19/3 10/9 81/3
B. W. G.—Nos 6 7 8 0
1 ds. per cwt. 510 600 750 810 950
Per cwt. 21/9 23/ 24/9 25/ 86/3
Machine-cut Fencing Staples.
B. W. G.—Nos . 5 & 6 7 8 0
Black, per cwt. 12/3 12/9 13/3 14/3
B. W. G.—Nos . 5 & 6 7 8 0
Galvanized, per cwt. 19/0 20/3 22/9 81/9
Kegs, 1/2 cach.
Straining Eye Bolts, with Nuts and Washers, 14 10ch x 16, 3/2 16 inch x 36, 4/2 18 inch x 36, 5/
per dos.; Galvanized, 2/ per doz. extra.
Best Galvanized Ropo Wire, in Long Lengths.

covers at all wire may be inferred from the statement te, however, that the shipments thereof from Great Britain to Australia and New Zealand

and 1881, 38,337 tons.

WIRE NAILS

are also an item of large business of some interest to your makers. They are quoted: Best English make, gauge, Nos. o to 7, 13/ per ewt.; 8, 13/3; 0, 13/6; 10, 14/6; 11, 15/6; 12, 16/9; 13, Best English make, gauge, Nos. o to 7, 14/ per cwt; 8, 13/1; o. 13/6: 10, 14/6: 17, 13/6: 17, 14/6: 18, 18/6: 18/6:

WROUGHT NAILS AND RIVETS

have a meaning for many of your readers, as they will see by at least one line hereunder:

Carpenters' rose and coopers' nails (for West India market), 4d, 2z/6 per cwt.; 6.20/6; 8, 18/; 10.16/9; 20.15/6; 30.14/9, 2trong rose nails, 1½ inches, 2z/per cwt.; 1½, 20/; 2, 17/; 2½, 17/6; 3½, 13/6, 13½, 13/6; 32½, 13/6, 13/6; 13½, 11/9; 5, 11/; 6, 10/6; 7, 10/; 8, 9/9 ditto galvanized, 3/6 per cwt. extra. Fine clasp nails, 2d., 40/per cwt.; 3, 37/6; 4, 30/; 5, 23/3; 6, 21/6; 8, 20/; 10, 18/9; 20, 17/3. hingling nails, 2d., 42/per cwt.; 3, 31/6; 4, 27/6; 5, 22/3; 8, 21/; 10, 18/9; 20, 17/3. Countersunk clout nails, x inch, 2x/6 per cwt.; 1½, 2z/6; 1½, 24/9; 2, 2z/6; 2½, 21/; 2½, 13/6; 3, 18/9; 25/6; 1½, 24/9; 1½, 25/6; 14, 17/1. Best best countersunk Swedish charcoal horse nails, No. 3, 08/per cwt.; 4, 75/; 5/9/6; 6, 60/; 8, 53/6; 10. 49/; 12, 46/6. Coopers' rivets, No. 2, 31/6 per cwt.; 3, 24/6; 4, 22/; 6, 18/9; 8, 17/9; 10, 11/; 12, 16/6; 14, 15/3; 20, 15/3; 30, 14/9. Pan or eup-head rivets, ½ inch diameter, 20/per cwt.; 5-16, 17/; 34, 15/3; 20, 15/3; 30, 14/9. Pan or eup-head rivets, ½ inch diameter, 20/per cwt.; 5-16, 17/; 34, 15/3; 20, 15/3; 30, 14/9. Patent wrought nails, 45 per cent. off M nails; 40 per cent. off cwt. nails, for orders of 2 tons and upward.

TIN PLATES have a meaning for many of your readers, as

TIN PLATES

continue steady and may be said to be improving, although they are in no sense subjected to the pressure of any abnormal demand. The great majority of the mills are reported well engaged for a month or so, while something like 50 per cent. are said to have a sufficient reserve of orders on their books to insure steady occupation for about three months. The orders are doubtless very largely from Liverpool and London merchants, who have deemed it prudent to place chants, who have deemed it prudent to place their specifications pretty well ahead. In this they have, in all probability, taken a wise course, inasmuch as these goods must grow dearer in the teeth of an uplifted tin grow dearer in the teeth or an upinted tin market and no prospects of cheaper sheet iron. Stocks at Liverpool are said to be de-creasing, but if freights do not rule lower or your market take a big jump upward, it might not be an impossibility for storing to again develop. Your demand is stated to be steadily good and on the increase, but, so far, I do not cether that shippers or makers are I steadily good and on the increase, but, so far, I do not gather that shippers or makers are being unduly inconvenienced by the volume of business. So long as buyers can have their wants promptly and fully supplied, it is but reasonable to assume that the trade is well within control. In a general way I. C. cokes are called 18/6@19/6, and charcolls 21/@24/, but private and makers' specific heards were anywhere around those cific brands range anywhere around those limits. I quote two or three examples:

Another firm quote: Crown "Pliant" Best Charcoal .....
"Bols" Charcoal .....
"Metrop" Best Coke.
"Cosmo" Coke ...
(F. o. b. and less, 3 per cent, for cash.) Another list gives:

Writing from Liverpool, on January 16, Messrs. Caine & Layborne said: "Tin Plates.—The past month has been marked by unusual steadiness in prices, though the amount of business transacted is understood to have been of a moderate description. This is the more worthy of note, as showing the is the more worthy of note, as snowing the firmness of makers' position; a few weeks ago, under a similar condition of the market, prices would certainly have receded 2/@2/6 \$\overline{a}\text{ box.}\$ The Birmingham meeting on Thursday last was characterized by much hopefulness, and a moderate business was Thursday last was characterized by much hopefulness, and a moderate business was put through at slightly enhanced prices. How far the hopes of makers will be realized in the near future depends mainly on two things—an early resumption of buying on a large scale for the American market, and the continuance of high values for tin and other material. The probabilities are in favor of higher prices: at any rate, present prices abandoned. Should the men persist in their throughout their careers. demand for an advance of their wages, there may be trouble ahead, but not likely to be developed for the next four or five weeks.

SCOTCH PIG IRON

has undergone some depreciation in values has undergone some depreciation in vaces within the week, owing to causes mentioned elsewhere in this letter, and shipments have been on a limited scale only. There are 105 furnaces at work, against 122 a year ago. Stocks have slightly increased during the week. James Watson & Co. (Glasgow, Jan. 20) say: "Our market has been flat this week, with a considerable business done in week, with a considerable business done in warrants at receding prices. On Monday we opened at 50%, cash, and closed at 51%. On Tuesday the price fluctuated between 51% and 51%. On Wednesday the market was irregular, between 51% and 51%. Yesterday we were depressed with business from 51% to 50%10%, while to-day the price has fluctuated between 50% and 51%1%, closing sellers at latter, buyers near. In sympathy with warrants makers iron is quoted at a reduction all round. The shipments last week were 5767 tons, as compared with 6677 tons for the corresponding week of last year." We quote:

G. M. B., at Glasgow .. . . Conness. Langioan, Gartsherrie, at Glasgow. Gartsneries, at dialegow.
Sammerles,
Calder,
Carbroe,
Giengarnock, at Ardrossan.
Egilnton,
Daimeilingtos. CLEVELAND IRON

you have now so fully quoted by cable that I need not do other than mention it here. The local demand is exceptionally heavy, and the proximate opening of the shipping season will probably enhance prices. The steel works continue fully engaged. Last week Bolckow-Vaughan's shipped a quantity of light flange rails for the Louisville and Nashville Railway and will sand other caregory. ville Railway and will send other cargoes shortly. They are now making from 4500 to 5000 tons of rails weekly.

WEST COAST HEMATITES

continue steadily strong, notwithstanding a few parcels in second hands offered at a little below producers' prices. Ores are stiff and large lots of Spanish have been sold at 18/ is ton ex ship, while Cumberland ore is quoted 16/@ 18/ at the mines. Last week's shipments included 12,534 tons pig iron and 7443 tons rails. Makers' prices of pig iron

	No. 1.	No. z.	No. 1.
Cleator	68/	67/	66/
Lonsdale	65/	64/	64/
Workington	68/	64/	63/
West Cumberland			
Lowther	65/	64/	63/
Moss Bay		4.1.4	63/
Distington	64/6	63/6	62/6
Harrington	65/	64/	63/
Solway	65/	64/	63/
Maryport	65/	64/	63/

accepted for Canada. These are prompts, and represent actual business prices. I observe the most amazing statements in newspaper circulation as to quotations. In some instances £7. 10/ and £7 15/ are given, as to which I can only say that the "facts" are absolutely erroneous, or that the prices relate to tram rails. As to futures I think I am able to discern a slight relaxation on the part

to shipbuilding and the carrying trade, open out delightful prospects. Of the two I think they would prefer the adoption of the idea of the New York Chamber of Commerce to admit free all materials for building and repairing ships, rather than that of the bill before the House of Representatives, enabling American capitalists to pur-chase abroad for foreign trade exclu-sively, but under the American registry. In the event of either proposition becoming law it is clear that Great Britain would benefit to an enormous extent, seeing that at present she alone possesses facilities and materials for iron and steel shipbuilding on

FRANCE.

off rapidly, and the future promises well. In the Ardennes great firmness is noticeable on the basis of 18.50 @ 19 for No 2 Merchant. There is a great and increasing demand in that district for machine-made Naiis in excess of the capacity of production. This may also be said of Bolts, which rose 1½ @ 2 francs \$\text{P}\$ roo kg. The feeling remains a strong one in the Haute-Marne. In the Loire and Khone basin Merchant Iron commands 22 francs at St. Etienne; railway material is in active request. In the Meurthe and Moselle no more orders are accepted for the fore half of the year. An extraordinary liveliness remains at the North on the basis of 18.50 @ 19 for Merchant Iros. Coal—The weather has not been cold enough to impart much life to household Coal; industrial is active.

BELGHE.

(Revue Universelle.)

BRUSSELS. Jen. 23, 1882.—Iron.—Prices still continue to harden in this country, though slowly. France has again been in the market for moderate amounts. Most of our makers have got plenty of orders, securing them work for at least six months to come; there are a few isolated cases among them in which orders enough have been received to keep them busy for the entire year. The smaller concerns are not quite as favorably situated and accept orders to be filled soon, but none of them complain of a lack of work. Most of these are contented, a few even more so than usual. Under these circumstances, there is no reason why prices should be pushed to a higher level soon; the situation is a good one as it stands. The fact is that toward summer a good many new concerns, or the increased capacity of the old ones, will not fail to swell production during the dullest season; if, therefore, prices are now raised beyond measure, a decline of some moment may then become inevitable. There is much cheerfulness, meanwhile, at Charleroi on account of the orders recently received from France. Puddle Pig is bringing 7 francs \$100 kg. at Charleroi, and Foundry ditto is also quite firm in that locality. The Athus turnaces ask 6.50 at the works, or 7 francs delivered, for Puddle Pig. Merchant Iron meanwhile, currently brings 14 francs \$100 kg. while in some instances between 14.50 and 15 francs is obtained. Beams are firm, but without upward tendency. For Sheet Iron the basis of 30 francs is firmly maintained for common sizes, while 3 mm. Sheets bring 21 francs, with 2 francs difference for every half mm. less. Polished sheets bring 34 @ 44 francs, according to quality; manufacturers thereof intend forming a combination. Coal.—The comparatively mild weather has restricted the demand for Coal for domestic use, but for industrial purposes it sells all the more readily and in these Sorts the market rises. We quote: Mixed Coal, 22.50 & 13 francs; Small Coal, 10 @ 11; whereas Coal for household use is weak at 2

to tram rails. As to futures I think I am able to discern a slight relaxation on the part of the producers of this country. They are easy about the next three or four months, by they begin to perceive that there may not be any considerable overflow of American orders toward Europe after about April or May next. They know that your almost april or May next. They know that your early almost and that your new and improved plants will greatly assist in keeping American orders at home. That being so, they are carefully assist in keeping American orders at home. That being so, they are carefully assist in keeping American orders at home. That being so, they are carefully assist in keeping American orders at home. That being so, they are carefully assist in keeping American orders at home. That being so, they are carefully assist in keeping American orders at home. That being so, they are carefully assist in keeping American orders at home. That being so, they are carefully assist in keeping American orders at home. That being so, they are carefully assist in keeping American orders at home. That being so, they are carefully assist in keeping American orders at home. That being so, they are carefully assist in keeping American orders at home. That being so, they are carefully assist in keeping American orders at home. That being so, they are carefully assist in keeping American orders at home. That being so, they are carefully assist in keeping American orders at home. That being so, they are carefully assist in keeping and pursue other tackies. They are naturally deased about the new bloom decision.

YOUR TARHFF still possesses a deep interest—one might almost say a strange fascination—for our people, sepecially for the manufacturing and mercantile sections of the community. Notwithstanding all that has been said, written and done in your country in the establishment, development and maintenance of protectionism, and in spite of the apparent utter hopelessness of all external and internal efforts to open your eyes to

(Koch & Viterboom.)

Rotteadam, Jan. 17. 1882—Tin.—Tae upward movement has been going on during the week, and has now been uninterrupted since the holidays; we are, therefore, now able to quote: Banca, 67.75 guilders ▶ 50 kg. and Billiton, 67.50, after great animation in dealings. On the 31st inst. the Netherland Trading Society will sell 33.400 slabs Banca. January 19.—Since the above was written Billington has been carried by pure speculation to 69.25 and Banca to 69.50, and distant futures even, 50 centimes higher. While a further advance is possible. If not probable, consumers have withdrawn from the market altogether in the meantime, and they will not buy a slab unless compelled to do so by pressing requirement. For the moment speculators for a rise dickste terms.

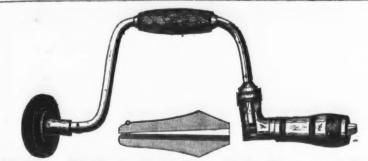
(Hessenauer & Co.) materials for iron and steel shipbuilding on a large scale. It is, therefore, quite certain that the two measures named will be carefully and intently watched in Great Britain throughout their careers.

FOREIGN.

| Colonbo | Dec 24. 1881. — Plumbago. — There has been very little doing. We quote at the close, in rupes, \$\(\text{\$\text{\$W}\$}\) tom. Fine Lump, 120 \$\(\text{\$\text{\$W}\$}\) 135. During the month the Herald took for New York 120 cwts.; total shipments to all quarters since Oct. 1: 53.283 cwts., against 20.10 1880; 26.797 in 1879, and 12.333 in 1878. Exchange.—Six months' credit bills on London, 1.8 9-16 to 1/5\(\text{\$\text{\$W}}\).

28

walues the construction of the first state of the caise o The Hudson River Tunnel.-The cais-



## BRACES

After having made almost every kind of a Bit Brace and tried them on the market, we find that our BARBER IMPROVED BRACE, as seen in this Cut, is the only one which gives universal satisfaction. During the past six months we have made some slight changes on this Brace, which remove all objections to it and make it absolutely perfect. We are aware that other Braces are sold at a less price, but they are also made at a less cost. Everything which goes into the Barber Brace is of the best and most expensive quality, and one of them will outlast six of any other kind. The Sweeps and Jaws are of steel, the Head of lignumvite and Revolving Handle of rosewood. It is highly polished and heavily nickel plated. The Jaws will hold, without any fitting, Tool Shanks of every shape, including Round Twist Drills. When furnished with the Ratchet Attachment, for boring in places where the Sweep cannot be revolved, it is the only Brace which will answer that purpose. We have not changed the price for many years, and do not anticipate any change in the near future; but from year to year we have been adding to the quality so as to make the cost to us double what it was ten years ago. We have recently added to our manufacturing facilities, and are now prepared to supply the world with Braces.

#### LIST PRICES.

No.	10-14-inch	Sweep, per dozen\$33.00 No. 14-6-inch Sweep, per dozen\$21.00	
No.	11-12-inch	Sweep, per dozen 30,00 No. 31-12-inch Sweep, per dozen 39.00	ł
No.	18-10-inch	Sweep, per dozen 27.00 No. 32-10-inch Sweep, per dozen 36.00	I
Mo.	13- 8-inch	Sweep, per dozen 24.00 No. 33— 8-inch Sweep, per dozen 33.00	l

# MILLERS FALLS CO., 74 Chambers St., New York. **HEATON & DENCKLA HARDWARE CO.,** Hardware Commission Merchants,

507 Commerce Street, Philadelphia.

MALLORY, WHEELER & CO.'S Door and Pad Locks.

UNION MANUFACTURING CO.'S Butts.
AMERICAN SCREW CO.'S Screws. D. R. BARTON TOOL CO.'S Edge Tools, &c. FRANCE'S Shutter Holders.

Anti-Window Rattlers, Brass and Nickel-Plated. WESTERN FILE CO.'S Cast-Steel Files.
AMERICAN SHEAR CO.'S Shears and Sci

HP NAIL COMPANY'S Wire, Steel, Iron and Brass Nails and Barbed Nails. STEELE & SONS' Wrought Handle Sad Irons.

E. & 6. BROOKE'S "Anchor Brand" Nails, Brads, EXCELSIOR MILLS, Genuine Turkish Emery. Splies, &c. BROWN & BRO.'S Silver Plated Spoons and Forks.

GAYLORD MANUFACTURING CO.'S Till, Chest and Cupboard Locks,

AMES' Genuine A Chester Emery.

COLWELL & COLLINS, NORWAY BOLT CO., Norway Carriage and Tire Bolts. PLYMOUTH MILL CO.'S Black and Tinned Iron Rivets.

AMERICAN MACHINE CO.'S Fluters, &c.
STUART PETERSON & CO.'S Tinned and Enameled Ware, &c.

Also a large line of Heavy and Shelf Hardware.

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For Nickel, Bronze, Brass, Copper and Silver Plating. manufacturers.

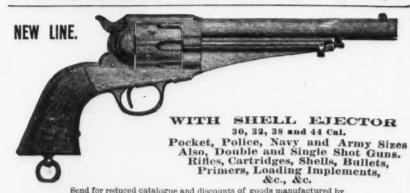
Experienced men sent to put up machines and instruct purchasers.

INFRINGEMENTS. INFRINGEMENTS.
We call attention to infringements of the Weston Machine in which Automatic Switches are used to prevent change of current. The Weston Co. are owners by grant or purchase of all forms of Automatic Switches for Plating Machines. The adoption of these machines will certainly lead to great loss to parties purchasing or using them.

MANUFACTURERS OF

MANUFACTURERS OF ast Nickel Anodes, Pure Nickel Salts, Polishing Materials,

New York Office, 92 & 94 Liberty St. Manufactory, Newark, N. J.



E. REMINCTON & SONS. 283 Broadway, NEW YORK

THE DELUSION.

THE GEM CARPET STRETCHER.



Patented June 8, 188c. The Best and Cheapest in Use.

DIRECTIONS.—Tack the carpet at one side of the som, then go to the other side, and with the Stretcher raw the carpet into place, leaving the spur a few school from the base-board. Take up the slack in the arpet under the spur and drive the spur gently into a floor; it will hold the carpet in place while you rive the tacks. Manufactured by

CLAUDIUS JONES & CO., Erie, Pa.

CHARLES H. HOWELL & CO.,

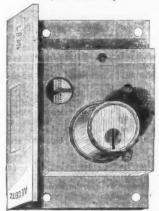
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#### LABOR AND WAGES.

The Western Window Glass Association, at a meeting recently held in Pittsburgh, are reported to have discussed the labor question at considerable length. It was claimed tion at considerable length. It was claimed that teastern glass was being sold in the West at a less price than Western-made glass could be sold at. Skilled labor in the East being from 20 to 25 per cent. lower than that of the same character in the West, has enabled the underselling. There was a disposition manifested to retaliate by placing large less of glass in the Eastern perfect.

state that they will not return to work until the discharged men are taken back, which will never be done, as Park Bros. & Co. refused, and always have, to re-employ a

The trouble between the Pittsburgh Besse mer Steel Company, of Homestead, and their workmen, which has been alluded to before, has culminated in the arrest of a number of workmen. The suit is for damages, and in the petition presented to court it is alleged that the defendants, since they quit the em-ploy of the company, have used every effort to intimidate the men employed in their places, and that for this reason the mill has been shut down and the plaintiffs subjected to serious damage. The defendants gave themselves up, and on being brought to Pittsburgh entered bail before Alderman Burke. The Amalgamated Association, of which they are members, will see that they are ented by counsel when the case co

Since the furnaces at the new mill of the

Since the furnaces at the new mill of the Phoenix Iron Company, at Phoenixville, have been in operation the puddlers have been making six heats for a day's work, which they could do in the same time it took them to make five heats in the old furnaces.
Recently the workmen joined the Amalgamated Association. The association issued an order some time ago, stating that thereafter five heats would be considered a day's after ave heats would be considered a day's work, and forbidding any of its members from making more than that number. The Phenixville branch of the association notified the Phenix Iron Company that after last week they should drop one heat. This the company objected to, as it would leave the furnaces standing idle from four to five hours out of the twenty-four which would be hours out of the twenty-four, which would be a great loss to them, as the consumption of coal during that time would be almost as great as when in operation. As the men were paid by the ton for all the iron they made, and as there had been no effort on the part of the employers to reduce the retest the made, and as there had been no effort on the part of the employers to reduce the rates, the object of the move was not quite apparent to them. The company accordingly notified the puddlers that in case they persisted in this move they would be compelled to close their furnaces until other arrangements could be made. The puddlers held a meeting to take the matter into consideration, and resolved to obey the mandates issued from their headquarters. The company were notified of the quarters. The company were notified of the decision, and masons were put to work walling up the furnaces, with the exception of one or two which were left to furnish heat for making steam to run the machinery in the mill. Last Monday morning the puddlers informed the company that they would accept the terms offered them, but owing to the absence of one of the managers no arrangement could be made.

At a meeting held in Pittshurgh recently.

At a meeting held in Pittsburgh recently, a gentleman from New England, who has been employed for several months in gathering statistics, states that he has found that the workingmen of Pittsburgh re-

lieries, and at most of these men from distant places are present for the purpose of aiding in the matter of organization. However, nothing more has been done than to select delegates, who are to act as a grand commit-tee to wait on the president of the company

and make application for an advance of 20 per cent on the present wages.

The miners at the Home and Union mines,

The miners at the Home and Union mines, near Coshocton, Ohio, have struck against a reduction of 12½ cents per ton.

The Monongahela Republican says: We happened to see a recent pay roll of a coal works not far from this city, and copy a few of the items, showing the wages possible by good hands on a fair run: No. 4, 2192 bushling of days working \$2.85, per days. No. good hands on a fair run: No. 4, 2192 bushels in 20 days, making \$3.84 per day; No. 21, 2360 bushels in 20 days, making \$4.13 per day; No. 27, 2525 bushels in 19 days, making \$4.65 per day; No. 34, 2030 bushels in 16 days, making \$4.45 per day; No. 57, 2289 bushels in 18 days, making \$4.32 per day. Of course, this is by no means a test; we do not publish it as such, but only to show that with steady work it is possible for miners that with steady work it is possible for miners to make extra good wages. The lowest man

the largest concern of the kind in the world. The company treat their employees in a man-ner that insures the latter's best effort and cordial co-operation in the business.

Last week the stove manufacturers of Pittsburgh and Allegheny received a com-

munication from their molders that unless an advance of 10 per cent. was granted imthat of the same character in the West, has enabled the underselling. There was a disposition manifested to retaliate by placing large lots of glass in the Eastern markets, but no action was taken. It was resolved not to work in July and August, and all the manufacturers pledged themselves not to start up their factories after that time, unless was a meeting and decided that they would not grant the demand, and as a result the stove foundries of the two cities are idle, none of them firing up on Monday morning. "As you know, we struck for an advance of 10 per cent.," said a well-known member of the Stove Molders' Union to a reporter in conversation regarding the strike. "It embraces all the stove men in the two cities, who are controlled by the Iron Molders' start up their factories after that time, unless wages in the East and West are equalized.

About fifty of the colored puddlers, helpers and heaters employed in the Black Diamond Steel Works, Pittsburgh, struck on Saturday last because three union puddlers were discharged the day before for refusing to work with a non-union helper. The members of the firm offer to confer with the strikers without reference to the Amalgamated Association, fight. At Filley's stove foundry in St. Louis, where there are more men employed than in all Pittsburgh, the union all pittsburgh are involved. Good molders can make from \$2.50 to \$4 a day, though the regular run of wages would average \$3 per day. The union that is controlled by the 1ron who are con ployed than in all Pittsburgh, the union has spent \$22,000 in the past six months. I do not care to tell the molders' side of the story, unless the employers begin and open the ball. Of course the object is more the ball. Of course the object is more money. Business is good, but rents are rising, and supplies are higher than ever. The last strike we had was about a year ago, and our men got their demands. No one figures as an agitator, but the strike was inaugurated by general consent. As to its duration, I do not think it will last over three or four days at the farthest, for the stove men cannot afford it." Mr. De Haven, one of the manufacturers, stated that the strike began on Monday morning; that one of the manufacturers, stated that the strike began on Monday morning; that about 300 men were involved altogether. Seven foundries were affected, viz.: A. Bradley & Co., Bissell & Co., Duncan & Baldwin, Crea, Graham & Co., Graff & Co., Anschutz & Co. and De Haven & Co. Mr. De Haven stated that the reason the store De Haven stated that the reason the stove men had refused to grant the advance was men had refused to grant the advance was that they could not stand it, and again, that the men were receiving now the same prices they had received during the war, and at least 10 per cent. more than they received in any other city. What the outcome would be, Mr. De Haven could not say.—Pittsburgh Dispatch.

#### The Oldest File Concern in the United States.

The removal of the business of the J. Barton Smith Company to the new premi-ses just completed for them in the north part of Philadelphia, is an event in the file trade, owing to the fact that they are the oldest file manufacturing house in the United States. The late J. Barton Smith, founder, and for thirty years head of the house, was for many years superintendent of Groves & Sons, of Sheffield. He came to this country in 1342, and immediately commenced the manufacture of files, with a determination to make goods equal, if not superior, to those for which his native town was so celebrated. For the greater part of the time he studied the wishes of his consumers, and coming into daily contact with them, was enabled to learn all the wants of the various workers in metals, &c., and to make a file meeting all requirements. Charles F. Cripps, nephew of the late J. Barton Smith, now president of the company, and who has been with the house thirty years, still gives his personal attention to all the details of manufacture. Mr. Gilbert Parker, who was with the house Gilbert Parker, who was with the house as salesman during seven years, and two years as partner, is now treasurer and general agent. Their new premises are very large and furnished with every convenience, and as they occupy three sides of a square, have abundance of light and air, from which they can never be shut out. Entering from Somerset street, the offices and packing rooms being to the right, we find the forging and annealing room, 40 x 100. Then the boiler and engine room, in which they have just that the workingmen of Pittsburgh received 25 to 75 per cent. higher wages than those in New England for the same kind of work. Yet the New England men live better and more comfortably, and the only reason he could give for it was that the large mills and factories of Pittsburgh are surrounded by beer saloons, in which the workingmen spend most of their wages.

About 400 carriage makers are on strike at Rochester, N. Y.

A revival of the old Miners and Laborers' Union is now being agitated among the emission and rooms throughout are fitted up A revival of the old mines and the om-Union is now being agitated among the om-ployees of the Delaware and Hudson Canal ployees of the Delaware and Hudson Canal light and cheerful, are finished in remarkably good taste. The works will accommodate about 400 hands, and if the demand for files keeps up as it has for the past two or three years, the company expect at an early date to utilize their entire capacity.

> A Strange Accident.-A singular accident happened in Cleveland, Ohio, 3d inst., at the Cleveland Rolling Mill Company's Bessemer Steel Works. One of the convert-Bessemer Steel Works. One of the converters, manipulated by hydraulic power, was handled by a boy new at the business, and he let it tip so far that a large quantity of the melted metal poured out on the damp sand in the pit, producing a violent explosion which broke a great many panes of glass in the mill and adjacent building. Half a dozen men were more or less burned by flying men were more or less burned by flying metal, but only two severely—Robert Reardon and John Quigley—and they not fatally. Reardon was most hurt by running his head against an iron door trying to escape.

that with steady work it is possible for miners to make extra good wages. The lowest man in 128 dug 2008 bushels in 18 days and made \$3.70 per day.

The stove-plate molders of Pittsburgh recently resolved to ask for an advance in wages of 10 per cent. On Monday the employers met and refused the advance, whereupon the molders went on strike and the foundries will be closed for an indefinite time.

No better example of the relations that should exist between labor and capital could be desired than is presented by the Columbus Buggy Company, Columbus, Ohio, perhaps The House Committee on Naval Affairs

adapted to shipbuilding, and on Saturday he conducted a series of experiments at the Navy Yard in presence of the committee, to test the relative merits of steel and iron for shipbuilding.

The Treasury Department has been informed officially by the President of the Dominican Republic that from and after the 1st of January, 1882, the 34 per cent. that has heretofore been collected as per tariff on all merchandise imported from foreign countries for consumption in all the territory of tries for consumption in all the territory of the Republic will be increased to 40 per cent.

The Chicago Smelting and Refining Company are erecting works with a capacity of 40 tons per day, for the purpose of refining and separating silver and lead bullion, and will make a specialty of doing custom work. This company has been in business about eight years.

The Sultan had an interview a few days ago with the American Minister, Gen. Wallace, in reference to information required in respect to agriculture, and an order has since been sent to America for specimens of the most improved agricultural implements.

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Heating and Purifying Water for Steam Boilers. Patented July 19 1877 Has Straight Tubes. SIMPLICITY, RELIABILITY and **EFFICIENCY** At Less Cost Than any Other. Write for prices and further information to the manufacturers,

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BAR IRON SHEARS Hand Lever Shears, cutting Flat Bar ron, 34x2, 54x3, 14x4, and 1 Inch round, moothly, leaving good ends; weight, 375 bs.; reduced price, \$65, net. Next smalsmoothly, leaving good ends; weakin, 375 lbs.; reduced price, \$65, net. Next smaller size cuts \$7x flat and \$7 round; weight, 165 lbs.; \$9.0. Smallest size cuts 5:16 flat and \$7 round, \$35.

Those are the most powerful Bar-Iron Shears for Blacksmith work ever invented, while in price they are below any shear of equal capacity in the market. PEERLESS PUNCH AND

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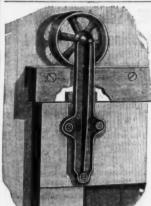
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New Upright Power Drill Presses; swing 22 inches, back geared, quick return motion; large steel Spindle, balanced in column; revolving Arm and Table; cut Gears; Pulleys, 9 2 2%; a strong brace extends from base to column, stiffening it at point of greatest strain—a new feature. Weight, roso lbs.; hight, 6 feet. Price, \$2 arc; boxing extra. Small size, swing 13 in., lever feed, three speeds; tight and loose pulleys (no countershaft required). Price \$2 arc.

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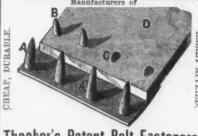


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42 25 10	Chicago Smelting and Refin'ng Wks., thi age 11-32 Philadelphia Smelting Co. Limited, Philadelphia 32 Reeves Paul S., 76 South Broad, Putta. United States ·melting Works, Philadelphia, Pa., 15
. 18	Vermont Snath Co., Springfield, Vt
. 4	U. S. Smelting Works, Philadelphia, Pa. 16 Spelter, Manning & Squler, 113 Liberty, N. Y
39	Homobolog I are Yoke M II
25 t	Spoons. Holmes, Booth & Haydens, 49 Chambers, N. Y. 25 11
.18	Springs. Cary & Moen, 34 W. 29th, N. V.
34	Rowland wm, & Harvey, Frankford, Phila
. 5	Stumps, "tencil. Michael A. M., Albany, N. Y.  Steam Hammers, &c., Makers ot. Dienelt & Eisenhardt, Philadelpola, Pa., 40 Dudgeon Richard, 2 columbia, N. Y., 11
19 39 42	Dudgeon Richard, 24 Columbia, N. Y.  Steam Pumps, &c., Manufacturers of, Cameron A. S. East 241, N. Y.
.42	Dudgeon Richard, 22 Columbia, N. Y.  Steam Fumps, &c., Manufacturers of, Cameron A. S., East 22d, N. Y. Clayton Steam Pump Works, 14 and 10 Water st.  Brooklyn, N. Y. Crane Bros. Mfz. Co., Chicago, III.  Actiowan Jonn H. & Co., Chicago, III.  Storer 9, W., 12 N. Ad, Philadelbina, 40
.38	The Miller Co., Canton, O.
. 6	Steam Tenps.
. 36	Steel Importers. Carr J. & Kliey 30 Gold, N. Y. Hobson Francis & Son, 97 John, N. Y. McCoy & Sanders, 132 Duane, N. Y.
.41	Providence Steam Trap Co., Providence, R. J.   15
. 25	Hubbard Chas, 40 Cliff, N. Y. Jones B. M. & Co., 11 and 13 Oliver, Boston, Mass. 34 Steel Manufacturers.
-33	Albany & Rensselaer Iron & Steel Co., Troj. N. 1. 4 Atha. Benjamin & Co., 211 Pearl, N. Y.
33	Chrome Steel Works, Brooklyn, N. Y. 31 Cleveland Crucible Steel Co., Cleveland, O. 55 Cleveland Rolling Mill Co., Cleveland, O. 54 Gautier Steel Department of Cambria Iron Co. Johnstown, Pa. 38 Midvale Steel Co., Nicetown, Phila., Pa. 66 Miller, Metcalf & Parkin, Pittsburgh 31 Navior & Co., 93 John, N. Y. 34 Navior & Co., 93 John, N. Y. 34
. 3	Johnstown, Pa. 38 34 Midvale Steel Co., Nicetown, Phila., Pa. 68 34
. 9	Naylor & Co., 99 John, N. Y. Pennsyivania Steel Co., 268 S. 4th, Phila. 5 Philadelphia Steel Forge, Philadelphia. Pa. Bowland Wm. & Harvey, Frankford, Philo. 34 Sanderson Gas. & Co. of Gold N. Y.
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13	Shoenberger & Co., Pittsburgh, Pa. Smitn, Suton & Co., Pittsburgh, Pa. Singer, Minick & Co., Pittsburgh, Pa. Snang Steel and Iron Co., Limited Pittsburgh, Pa.
39	Spencer John & Son, Sheffield, England 10 Standard Steel Works, Philadeiphia, Pa. 10 The Sigmens Anderson Steel Co. 5
. 6	Shoenberger & Co., Pittsburgh, Pa. Smith, Sutton & Co., Pittsburgh, Pa. Singer, Nimick & Co., Pittsburgh, Pa. Spang Steel and Iron Co., Limited, Pittsburgh, Pa. Spencer John & Son, Sheffield, England. Standard Steel Works, Philadesphia, Pa. The Steenens Anderson Steel Co. The Steel Co. of Scotland, 72 Pine, N. 35 Wardlow S. & C., Sheffield, England.  Steel Spiral Springs, Manufacturers on.
.38 .6 25	Cary & Moen, 234 W. 20th, W. Y.
.13	Stocks and Dies. Wijey & Russell Mg. Co. Greenfield, Mass
-38	Storage. Union Storage Co. Pittsburgh Po.
13	Strops, Razor Co., Wordester, Mass
¥37	Metzner W. C., Chicago, Ill
-34	Tucker & Dorsey, Indianapolis, Ind
.40	Tacks. American Tack Co., Fairhaven, Mass.  American Tack Co., Fairhaven, Mass.  Cobb & Drew, Plymouth, Mass.  Field A. & Sons, Taunton, Mass.  Grundy & Disosway, 16 Creenwich, V. Y.  Phillips E. & Sons, South etanover, mass.  Taps asst Pics.  Taps asst Pics.  Manning, Maxwell & Moore, Int Itherty, N. Y.  Wiley & Russett sig, Co., Greenfield, Mass.  Zesting Machines.
.40 .42 .41	Taps and Dies. Carpenter J. H., Pawtucket. R. I
.30	Manning, Maxwell & Moore, Ill I lberty, N. Y
36 £41 .42	Testing Machines.
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.18	Olsen Tinius & Co., Philadelphia, Pa. 2d Righle Bros., Philadelphia. 9 Tin Ware, Stambed and Japannes Shepard Sidney & Co., Buffalo, N. Y. 20 Tire I perfiters. Trombly E. C., Plattsburgh, N. Y.
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.42 .18 .41 .18 .29 18 38	Olsen Tinius & Co., Philadelphia, Pa. 26 Richle Bros., Philadelphia. Tin Ware, Stambed and Japannes. 9 The Ware, Stambed and Japannes. 9 Tire Upstiters. Trombly E. C., Plattsburgh, N. Y. Tobaco Cutters. Adams F. & Co., Limited, Erle, Pa. 36 New England Butt Co., Providence, R. I. 25 Toilet Ware. Gev. D. Winchell Mfg. Co., Cincinnati O. Tool Chests.
.42 .18         	Olsen Tinius & Co., Philadelphia, Pa. 26 Richle Bros., Philadelphia.  Tin Ware, Stambed and Japannes Shepard Sidney & Co., Bulfalo, N. Y. 30  Tire I partiers. Trombly E. C., Plattsburgh, N. Y.  Tobac o Cutters. Adams F. & Co., Limited, Eric, Pa. 36 Adams F. & Co., Limited, Eric, Pa. 35 Toilet Ware. Geo. D. Winchell Mg. Co., Cineinnati O.  Tool Chests American Tool Co., 116 Chambers, New York. 31 Tools, Mechanics. Standard Tool Co., Athol, Mass. 10
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steel, never to break or bend. Only Anvil made in United States fully warranted as above. None genuine without our trade-mark.

the English Anvil.

#### No. 231 South Front St., PHILADELPHIA.



TRADE MARK MANUFACTURERS OF

Pure White Lead, Red Lead, Litharge, Orange Mineral, Linseed Oil, AND PAINTERS' COLORS

## Brooklyn White Lead Co.



White Lead, Red Lead & Litharge No. 182 Front Street, NEW YORK,

#### **OHN JEWETT & SONS** Manufacturers of the well-known brand of WHITE LEAD.



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The Atlantic White Lead and Linseed Oil Co.,

Manufacturers of White Lead (Atlantic), Red Lead, Litharge, Glass Makers' Litharge and Orange Mineral;

LINSEED OIL. Raw, Refined and Boiled.

ROBERT COLCATE & CO. 287 Pearl St., NEW YORK



# COVERT MFC .= CO.,



COVERT'S

# PATENT HARNESS SNAPS,

Chain and Rope Goods.

These goods are sold by all leading jobbers in General and Saddlery Hardware at manufacturers' prices. Send for illustrated catalogue and price list.

# COVERT MANUFACTURING COMPANY,

WEST TROY, N. Y.

Gentlemen.-This cut illustrates our CAST IRON Furnace Lamps which are supercediag entirely the Tin Lamps wherever introduced, in consequence of their durability. They are now extensively used. In the Iron Districts of Ohio and some in Pennsylvania. We call your attention to and solicit your order for them, confidently asserting that they are an A No. 1 article in every respect.

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CARPENTERSVILLE, Kane Co., ILL., MANUFACTURERS OF



JACK

Sample sent if desired.

PRICE, \$12 PER DOZEN.

TOOLS.



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SCOTCH AND AMERICAN PIG IRON. MANUFACTURERS' AGENT OF
Bar Iron, Car Wheels, Axles, Rails and Railroad Supplies.

WHITAKER IRON CO., of Wheeling, W. Va.,

Best Bloom and RefinedSmooth Faced, Common and Charconi Black Sheet Iron,

Plate, Tank and Fire Bed. 36 DEARBORN STREET, CHICAGO.

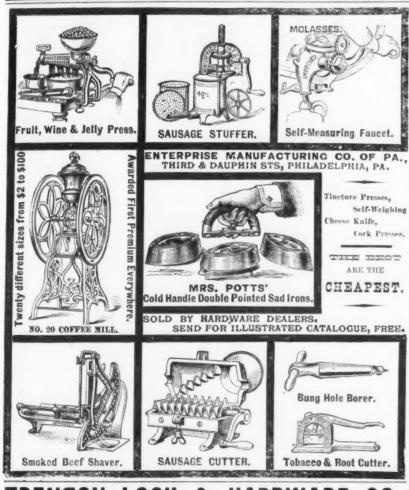


## THE SHRODER DOOR SPRING.

The BEST DOOR SPRING in the MARKET. It will hold a door open as well as shut, and by its peculiar form has four inches more leverage to hold a door shut, closing it tight, where all other Springs fail. No latch required with this Spring.

DELONG & SHRODER, Manufacturers, Warren, Illinois.

Correspondence solicited with jobbers and large dealers. We will send a full-size Spring or a small model free, on application. Try if



TRENTON, N. J.

#### AND LOCKS DOOR HARDWARE,

BRONZED IRON AND BRONZE METAL DOOR TRIMMINGS, BUTTS AND HARDWARE.

DOOR BOLTS WELL WHEELS FLUSH BOLTS SHUTTER BOLTS, PAD LOCKS,

BARN DOOR HANCERS, & RAIL, CRINDSTONE FIXTURES, SCREW & SIDE PULLEYS, NOISELESS PULLEYS, HAY FORK PULLEYS. SHELF BRACKETS,

PHILADELPHIA SLIDING DOOR HANGERS AND RAIL. Having largely increased our facilities and line of goods, we invite the attention of the

James M. Vance & Co., No. 211 Market St., Philadelphia. Walter R. Wood, Agencies. James Marshall, No. 48 Warren St., New York.



# MACHINIST'S PRENTISS' PAT. VISES, Berea, O., Nova Scotia, & other brands

Adjustable Jaw. Stationary or Pat. Swivel Bottoms. PEERLESS" SWIVEL PIPE GRIP

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23 Dey Street, New York.
SOLE PROPRIETORS. SEND FOR CIRCULAR

# STANLEY WORKS,

# Wrought Iron Butts, Hinges

# DOOR BOLTS,

Plain, Japanned, Bronzed and Plated.

FACTORIES: WAREHOUSE: 79 Chambers St., New York.



Wilson Bohannan, BRASS PAD LOCKS or Railroad Switches, Freight Cars, and the Hard are Trade. All sizes, with Brass and Steel Key, ith and without chains.

Patent Horizontal Rim Cylinder Night Latch.

Self-adjusting to doors of any thickness, with Patent Stop and Drawer Back Knob
RIGHT OR LEFT HAND. PASSENGER CAR LOCKS, Bronzed, Nickel-Plated and Japanned



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BEMIS & CALL HARDWARE & TOOL CO., Springfield, Mass. Stones for Machinists, Carpenters, Farmers and Glass Outters sonstantly on hand and cut to order.

### **CUN POWDER.** Laflin & Rand Powder Co.

No. 29 Murray Street, New York,
ufacture and sell the following celebrated brand ORANGE LIGHTNING. ORANGE DUCKING.

ORANGE RIFLE nore popular than any Powder now in use.

Blasting Powder and Electrical Blasting SHIP, FLOOR AND ICE

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ry Powder on hand and made to order SAFETY FUSE, FRICTIONAL & PLATINUM

# Pamphlets showing sizes of grain sent free



A fibrous material, encasing about oo per ent. of its volume of air, and therefore s

NON-CONDUCTOR

Being made from the slag of blast furnaces it is fire-proof and durable in contact with heated surfaces. Readily applied. Heaviest grade about 25 lbs. per cubic foot. Price, I cent per lb. at works.

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Muney, Lycoming Co., Pa ROBERT R. HAYDOCK & CO., Auctioneers & Commission Merchants, No. 75 Murray Street, New York, Solicit consignments of

Hardware, Cut'ery, Stamped Tinware, Woodenware, House furnishing Goods, &c., for Sale by Auction. Terms and furturer information may be had by didressing P. O. Box 2:55.

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OHIO GRINDSTONE COMPANY,

Manufacturers of

Of All Kinds.

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ATLANTIC STONE CO., Quarrymen and Stone Merchants. GRINDSTONES

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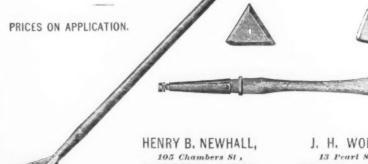
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PROVIDENCE, R. I.

SCRAPERS.



NEW YORK ACENT.

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# IRE STOVE PIPE SHELVES

TOWEL RACK.

TINNED WIRE.

Patented Nov. 16.

No. 2, Three-Quarter Circle.

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These are the Strongest, Most Useful and Ornamental Stove Pipe Shelves ever made. Orders respectfully solicited.

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BARN DOOR Terry's WROUGHT Iron HANGER & RAIL The BEST Hanger and Rail Snow and Ice in the market. Will not break; cannot lodge on cannot get off the the Rail. track. As cheap as the Write for Circulars. best cast iron.

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We invite the attention of RAILROAD MEN especially to our make of SPLICE BARS and Track its. Using the best brands of REFINED IRON, and paying close attention to the finish of our mufactures, we are enabled to offer our patrons BOLTS, NUTS, SPLICE BARS, &c., of excellent lity. Our works have been enlarged within a few years; all orders are now executed with prompts; all our work guaranteed.

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CHAMPION RINGS and HOLDER. CORN HUSKER keep Hogs from ting. No sharp ats in the nose.

HOC AND PIG RINGER and RINGS. Only single Ring in the market that closes on the outside of the

CHAMBERS, BERING & QUINLAN, Exclusive Manufacturers, Decatur, Ill.

C. F. HARRISON, BOILER, BRIDGE & TANK

THE COMBINATION IRON CLAD STEEL HORSE SHOE CO., SELF WELDING STEEL TIRE CO., BILLET AND WIRE CO., is and exclusive manufacturers of "Wheeler's Combination" shoes, Shoe Bars and Toe Calks. Tire and re. Full particulars upon application by mail or otherwise to WARE B. GAY, Treasurer, 66 State rest, 165-50, All persons cautioned against infringements.

# New York Wholesale Prices, February 8, 1882.

NO	W IUIK WIIUI
HARDWARE.	Butts. Wrought Brass
A nvils.  A Eagle Anvils, American.  F b roc dis Wright's.  10%c @ Armitage's Mouse Hole.  9%c @ Trentou.  Wilkinson's.	Cast Brass, Corbin's Fast Joint dis 208 Cast Brass, Loose Joint dis 108 111/40 Fast Joint, Narrow dis 408 108/40 Fast Joint, Broad dis 408
Anvil Vise and Drill.	LAOSE JOINE, WITH ACOPUS
Augers and Bits. Conn. Vailey Mrg. Co.	Parliament Butts   dis 508     Mayer's Hinges   dis 558     Loose Pin, no Acorn   dis 508     Loose Pin, Acorns   dis 408     Loose Pin, Acorns   dis 508     Loose   di
C. E. Jennings & Co. dis 40& Humphreysville Mfg. Co. from ils lves. Jan. 7, Jan. 7,	Loose Pin. Acorns, Japanned
Griswold. Nobles Mfg. Co. Snell Mfg. Co Watrous & Co. Extension Lip. dis	Fast Joint, I. Narrow dis 40% Fast Joint, Broad dis 40% Loose Joint, Broad dis 40% Loose Joint, Broad dis 45%
Millers Falls Co., \$28,00. dis.  Augers and Bits. Con. Valley Mrg. Co. Douglass Mrg. Co. C. E. Jennings & Co. Humphreysville Mrg. Co. Humphreysville Mrg. Co. Beecher French, Swift & Co. Griswold. Nobles Mrg. Co. Snell Mrg. Co. Snell Mrg. Co. Snell Mrg. Co. Such Town Lip. Griswold. Nobles Mrg. Co. Snell Mrg. Snell Mrg. Snell Mrg. Snell Mrg. Snell Mrg. Co. Snell Mrg. Sne	1.00se Pin, Acorns, Japanned, Plated Tips. dis 558   Fast Joint, IA. Narrow   MoUouff Hon.     Fast Joint, IA. Narrow   dis 408   Fast Joint, Broad   dis 408   Loose Blind, Regular   dis 408   Inside Blind, Light   dis 408   Loose Pin, Wrt.   dis 408   Spring Hinges   dis 507   Spring Hinges   dis 507   Spring Japanned   dis 507   Loose Pin, Wrt.   dis 608   Loose Pin, Wrt.
Hand Rail Bits	10 % Spring Hinges: 10 % Geer's Spring and Blank Butts
Imitation Jennings' Bits dis Ives' "Jennings" Bits dis 33\sigma Snell Mfg, Co.'s Jennings' Bits dis Andrews' Bits dis	45 % Union Spiral Spring, Ornamental dis Union Spring Hinge Co.'s dis 40 % American Spring Hinge Co.'s dis 40 % Gem Spring Hinges dis
Expansive Bits, Clark's, small, \$18; large, \$26. dis: Expansive Bits, Ives \$20 @ \$30-dis33 Expansive Bits, Blake's	25.5   Union Mfg. Co.   dis
Expansive Bits, Derby, \$17 and \$26. dis 20& hollow Augers, Ives' dis 15& Hollow Augers, French, Swift & Co dis 15& Hollow Augers, Douglass' dis 15&	10 %
tiollow Augers, Evenns' Adjust. & 602. \$48-dis 2.58. tiollow Augers, Evenns' Adjust. & 602. \$48-dis 2.68. tiollow Augers, Ives' Expansive, each \$4.50-dis 2.68. tiollow Augers, Universal Expan., each \$4.50-dis 2.68. Vood's	Blind Butts, Shepard's "Noiseless, Nos. 50 & 60.dis
Simiet Bits. \$7.50 P gross, dis 5 Simiet Bits, Diamond. P doz. \$1.10, dis 25&1 Gimiet Bits, "Bee" . dis 35& Double Cut Cimiet Bits Shepardson's	Blind Butts, Clark's, Nos. 1, 3, 5, 40, 45 and 50dls 7   Blind Butts, Sargent's, No. 1, 3dls 66%&2&1   Blind Butts, Sargent's, No. 12dls 70&1   Blind Butts, Reading's Gravitydls 66%&1
Double Cut Gimlet Bits, Ct. Valley Mfg. Co. dis 30&1 Double Cut Gimlet Bits, Hartwell's dis 50&1 Double Cut Gimlet Bits, Douglass'	clark's improved shutter ringe, 70s. 0, 1, 19, 2 1/6, 3
dorse's Bit Stock Drill	Hotehkiss   dis 2   Hotehkiss   dis 3   Hotehkiss   dis 5   Hotehkiss   dis 5   Sarqent & Co.'s.   \$19.70 and \$21.40, dis 65   Sarqent & Co.'s.   \$19.70 and \$21.40, dis 65   Hotehkiss   Cleavers.   dis 20   Hotehkiss   dis 20   Hotehkiss
4ewing, Bruss Ferrule. \$3.40 ¥ gross—dis 40&r- -atent Sewing, Short. \$1.00 ¥ dox—dis 40&r- ratent Sewing, Long. \$1.20 ¥ dox—dis 40&r- -atent Peg, Plain Top \$1.00 ¥ gross—dis 40&r- -atent Peg, Loather Top \$1.00 ¥ gross—dis 40&r- atent Peg, Loather Top \$1.00 ¥ gross—dis 40&r-	1 2 3 4 5 6 7 8
	Can Openers.  Messenger's Comet
Awis, Brad Sets, &cc.  Awis Sewing, Common. # gross \$1.70—dis 25&n kwis, Shouldered Peg. # gross \$2.45—dis 25&n kwis, Patent Peg. # gross \$2.45—dis 25&n kwis, Patent Peg. # gross \$2.45—dis 25&n kwis, Handled Brad # gross \$2.70—dis 25&n kwis, Handled Brad # gross # gross —dis 25&n kwis, Handled Brad # gross # gross —dis 25&n kwis, Socket Scratch # gross # gross —dis 25&n kwis, Socket Scratch # gross # gross —dis 25&n kris, Socket Scratch # gross # gross —dis 25&n kris, Socket Scratch # gross # gross —dis 25&n kris, Stankey & Excelsior, No. 1, \$0.50 dis 26&n Brad Sets, Stankey & Excelsior, No. 2, \$4.80 dis 36&n Brad Sets, Stankey & Excelsior, No. 2, \$4.80 dis 36&n Brad Sets, Stankey & Excelsior, No. 2, \$4.80 dis 36&n Brad Sets, Stankey & Excelsior, No. 2, \$6.80 dis 36&n Brad Sets, Stankey & Excelsior, No. 2, \$6.80 dis 36&n Brad Sets, Stankey & Excelsior, No. 2, \$6.80 dis 36&n Brad Sets, Stankey & Excelsior, No. 2, \$6.80 dis 36&n Brad Sets, Stankey & Excelsior, No. 2, \$6.80 dis 36&n Brad Sets, Stankey & Excelsior, No. 2, \$6.80 dis 36&n Brad Sets, Stankey & Excelsior, No. 2, \$6.80 dis 36&n Brad Sets, Stankey & Excelsior, No. 2, \$6.80 dis 36&n Brad Sets, Stankey & Excelsior, No. 2, \$6.80 dis 36&n Brad Sets, Stankey & Brad Brad Brad Brad Brad Brad Brad Brad	Duplex         \$\psi\$ doz 25c, dis 15@2c           Lyman's         \$\psi\$ doz \$3.7c, dis 25           28         No. 4, French         \$\psi\$ doz \$2.2c, dis 55           No. 5, Iron Handie         \$\psi\$ gross \$7.5c, dis 1c
Awis, Socket Scratch	Eureka
Brad Sets, Stanley's Excelsior, No. 1, 80.0dis 30&rc Brad Sets, Stanley's Excelsior, No. 2, 44.80dis 30&rc Axes.	Cap
Single Bit, 4½ to 5½ and under.    \$\pi\$ doz \$10.00 n Single Bit, 4½ to 5 and over   \$\pi\$ doz \$0.00 n Single Bit, beveled.   \$00 \pi\$ doz advan Double Bit, 4½ to 5½ and under   \$\pi\$ doz \$16.00 n \$\pi\$ doz \$20.00 n \$\pi\$ ouble Bit, 4½ to 5 and over   \$\pi\$ doz \$20.00 n \$\pi\$ ouble Bit, beveled.   \$1.00 \pi\$ doz advane	Universal. P doz \$3.00, dis 35 et Universal. P doz \$3.00, dis 35 et U.M. C., F. C. trimmed. 500 et U.M. C., E. L. ground 700 et U.M.
Axle Grease.	U. M. C., Double W. Proof.   \$1.40 \ \ \text{dis 5} \]   Ouble Waterproof, in 1-10's.   \$1.40 \ \ \ \text{dis 5} \]   Colt's Pistol, in 1.10's.   700 \ \ \text{dis 10} \]
Fraser's	F. L.
Bag Holders.  Sprengle's Patent, per doz \$18dis 40  Balances.	Cartridges.—Rina
All Spring Balances	\( \text{Wool.} \) \text{new list, July, '\$\si, \text{dis 10}} \\ \text{Carpet Stretchers.} \\ Cast Steel, Polished
Hand, White Metal. dis to Hand, Silver Chime. dis 2021:0 Hand, Globe (Cone's Patent). dis 2021:0 Gong, Abbe's. dis 2021:0	Bullard's. dis 2; Casters. Bed. dis 3; Plate and Shallow Socket. dis 3;&tro Deep Socket. dis 3;&tro
Gong, Yankee.         dis 30&10           Gong, Barton's.         dis 30&10           Crank, Taylor's.         dis 25&10           Crank, Brooks'.         dis 50&10&2	Deep Socket. dis 25%10   Cattle Leaders. dis 65%   Humason, Beckley & Co.'s. dis 60% 10   Sargent's. dis 60% 10
Bells.  Hand, Light Brass. dis 6t Hand, Light Hrass. dis 6t Hand, Extra Heavy dis 45 Hand, White Metal dis 6c Hand, Silver Chime. dis 20 Stroken Hand, Globe (Cone's Patent) dis 20 Stroken Hand, Globe (Cone's Patent) dis 20 Stroken Hand, Globe (Cone's Patent) dis 20 Stroken Hand, Globe (Cone's Hand, Globe (Cone's dis 20 Stroken Hand, Baylor's dis 30 Stroken Hand, Baylor's dis 30 Stroken Hand, Cone's dis 30 Stroken Hand, Cone's dis 20 Stroken Hand, Cone's dis 20 Stroken Hand, Cone's dis 20 Stroken Hand, Cone's dis 30 Stroken Hand, Cone	g Sargent's dis 60% 103  (Chain.  Trace, 6)4-10-3 # pair 790 )  t Frace, 6)4-10-3 # pair 700 ) dis 353
Lever, Taylor's Japanned	Chain   Pair 79c   Chain   Trace, 654 10-2   Pair 79c   Chain   Pair 79c   Chain   Trace, 654 10-2   Pair 79c   Chain   Pair 79c   Chain   Pair 86c   Pair 79c   Chain   Pair 86c   Pair
Call	Oneida Halter Chain (old list).   dis 40     Galvanized Pump Chain
Cow, Kentucky "Star" dis 20&10 9 Cow, Kentucky, Sargent's new list dis 55&10 9 Cow, Dodge's Genuine Kentucky, new list—	Chalk. # gross for net White. # gross for net Red. # gross for net Blue. # gross for net White Crayons. # gross igo net Chinels.
'ow, Texas "Star"dis 40 %	White Crayons. # gross 19c net Chisels. Socket Framing, Crossman
Bettews.   Idea   15   16   16   16   16   16   16   16	Socket Framing, Buck Bros
Belting, Rubber. I. Y. Belting and Packing Codis 20&50 \$	Socket Firmers, Crossman. dis 5585 5 Socket Firmers, Arlington Edge Tool Codis 55810 5 Socket Firmers, Buck Bros1876 list, dis 2216 8 Socket Firmers, Merrill dis 65810 5
Hit Holders.  **xtonsion. Barber's	Chisels. Socket Framing, Crossman
Blind Adjusters.—Domestic. V doz \$3.00—dis 15 % xccisior	Tanged Firmers, Spear & Jackson's 5.00 to £ Tanged Firmers, Buck Bros (Shank) 5.25 to £ Clamps.
Blind Fascene s. P doz pairs, \$1.00, dis 10 \$ an Sand's, Serew pattern P gro., \$10.00, dis 15 \$ an Sand's, Oil pattern P gro., \$8.50 net ashburn's Patent P gro. 50.50 net erriman's new list net ackrell's P doz pairs, \$6.05, dis 10 \$ dis	Clamps. Iron, Providence Tool Co.'s Wrt. Iron dis 25 Iron, Adjustable, Gray's dis 20 Iron, Adjustable, Lambert's dis 20 Iron, Adjustable, Bambert's dis 20 Iron, Adjustable, Hammer's dis 15 Iron, Adjustable, Hammer's dis 20 Iron, Caljustable, Hammer's dis 20 Iron, Calluct, Sargent's dis 20 Iron, Carriage Makers', Sargent's dis 60 Iron, Carriage Makers', Sargent's
ackrell's	Iron, Adjustable, Stearns'dis 20&10 % Iron, Cabinet, Sargent'sdis 65&10 % Iron, Carriage Makers', Sargent'sdis 60&10 %
ar Oed, % 11  *Blocks.—New list Jan. 5, 1882.  enfield Block Co., Rope and fron Strap'ddis 35 %  enfield Block Co., Wrot. Iron Com. busheddis 35 %  enfield Block Co., Wrot. Iron, all steel roll'rdis 25 %  enfield Block Co., Lig. and Iron Sheavesdis 25 %  anley Rule and Level Co.'sdis 40 % 16 s 40 % 10 %	
enfield Block Co., Lig. and Iron Sheavesdis 25 % enfield Block Co., Lig. and Iron Sheavesdis 35 % anley Rule and Level Co.'sdis 40% to \$ Bolts.	Cockey, Brass, Racking, new list, July 10, 1880
sanley Kule and Level Co.'s. dis 49x10 set Iron Barrel, Shutter, &c. dis 50x10 feet Iron Barrel, Shutter, &c. dis 50x10 feet Iron Barrel, Shutter, &c. dis 50x10 feet Iron Chain (Sargent's list). dis 50x10 feet Iron Chain (Sargent's list). dis 50x10 frought Square rought Square. dis 55x10 frought Square rought Shutter, Blron, Stanley's list, dis 50x10 frought Shutter, Brass Knob, Stanley's list, dis 50x10 frought Shutter, Sargent's list. dis 50x10 frought Shutter, Sargent's list. dis 50x10 frought Shutter, Sargent's dis 60x10 fringe and Tire, Philadelphia, new list. dis 50x10 fringe and Tire, Philadelphia, new list. dis 50x10 fringe and Tire, Philadelphia, new list. dis 50x10 fringe and Fire, Philadelphia, new list. dis 50x10 fr. Am. Serw Co. 9, Phila, new list, Nov 1, 70x10 fig. 50x10 fr. Am. Serw Co. 9, Phila, new list, Nov 1, 70x10 fig. 50x10 fr. Am. Serw Co. 9, Phila, new list, Nov 1, 70x10 fig. 50x10 fr. Am. Serw Co. 9, Phila, new list, Nov 1, 70x10 fig. 50x10 fr. Bay State from the first dis 50x10 fr. Am. Serw Co. 9, Phila, new list, Nov 1, 70x10 fig. 50x10 fr. Bay State from the first dis 50x10 fr. Am. Serw Co. 9, Phila, new list, Nov 1, 70x10 fig. 50x10 fr. Mills for the first dis 50x10 fr. Am. Serw Co. 9, Phila, new list, Nov 1, 70x10 fig. 50x10 fr. Mills for the first dis 50x10 fr. Am. Serw Co. 9, Phila, new list, Nov 1, 70x10 fig. 50x10 fr. Mills for the first dis 50x10 fr. Am. Serw Co. 9, Phila, new list, Nov 1, 70x10 fig. 50x10 fr. Mills for the first dis 50x10 fr. Am. Serw Co. 9, Phila, new list, Nov 1, 70x10 fr. Mills for the first dis 50x10 fr. Am. Serw Co. 9, Phila, new list, Nov 1, 70x10 fr. Mills for the first dis 50x10 fr. Mills for the firs	Cocks, Brass, Racking, new list, July 10, 1880
rought Shutter, all Iron, Stanley's listdis 50&10 \$ rought Shutter, Brass Knob, Stanley's list.dis 50&10 \$ rought Shutter, Sargent's listdis 55&10 \$ rought Shutter, Sargent's listdis 55&10 \$	Ale and Beer, new list, July 10, 1880. dis 40 % Coffee Mills.  Board and Box. dis 45 % Wilson's. dis 45 % Selsor's Pat.  American (Enterprise Mg. Co.) dis 25 % French Steel. dis 25 % French Steel. dis 25 % Combined Dinner Pail and Lantern.  Per dos. \$15.00. dis 35 % Compined Dinner Pail and Lantern.  Companses, Dividers, &c.
rought Suck Flush, Stanley's dis 40&10 \$ rought B. K. Flush, Com'n, Stanley's dis 5,82/6 \$ rriage and Tire, Common	French Steel. dis 25 % The "Swift" (Lane Bros.) dis 25 % Combined Dinner Pail and Lantern. Per doz. \$15.00. dis 25 %
rringe and Tire, Philadelphia Pattern. dis 70 % Jon Carriage dis 70 % B. & W. Carriage (old list). dis 65 % r. Am. Serew Co. %, Phila, new list, Nov.; 29, dis 75 %	Compasses, Dividers, &c. Compasses
cc, "Bay State"	Bemis & Call Co.'s Dividers. dis box2 5 Bemis & Call Co.'s Compasses and Califpers. dis box2 5 Bemis & Call Co.'s Compasses and Califpers. dis sox5 5 Bemis & Call Co.'s Wing & inside or outside. dis sox6 5 Bemis & Call Co. 's Double. dis 60 7 Bemis & Call Co. (Call's Patent Inside). dis 20 6 Bemis & Call Co. 's (Call's Patent Inside). dis 20 6 Bemis & Call Co. 's (Call's Patent Inside).
& E Mrg. Co	Bemis & Call Co.'s (Call's Patent Inside)
Borax	Clough's Wiredis 25 %
Boring Muchines. Upright. Angular. st quality, no Augers	Corn Knives and Cutters.—Bradicy'sdis 10 g Wadsworth's
Fraces. dis 20 \$  1	Cast Steel. # B Sign Iron, Steel Points # D 6/ge Curling Irons, &c. # D 6/ge Curling Irons, &c. # D 6/ge Un. \$1.80, 2.00, 2.00 dis to \$
dis 40% 8   dis 40% 8   dis 50% 5   dis	14, 54, 54 in., \$1.80, 2.00, 2.40. dis to \$ Curling Tougs
Fraces.  Shakus dis 50 % Shakus dis 10 % Sharus dis 10 % Sharu	Fitch's, new list   dis 50 %   Hotchkiss, Novelty, new list, July, 1880   dis 25 %   Hotchkiss, Novelty, new list, July, 1880   dis 25 %   di
	Rubber. \$\psi\$ doz \$10.00, dis 15 \$\frac{\psi}{\psi}\$  Curtain Pins.  Bilvered Glassnet  White Enamelbet
PREBE TVIPE Exceeds list of Dec. 15, 70, . Old Santo & 1	
tuil Rings. dis 55 % gent's. dis 60 % to 5 % chkiss' low list dis 60 % to 5 % chkiss' low list dis 60 % o 6 % dis 60 %	Cuttery.  Meriden Cuttery Co. (Table)

	sale Pr	
dis 64&10 9 dis 30 9 dis 20&10 9 dis 10&.0 9	Dog Collars. Embossed Gilt Leather Brass. Celluloid	dis a
dia softro	Door Springs.	
dis 50&10 %	Bee Rod	dis 1
	Gem (Cotl)— No. 1, Large, Japanned No. 2, Medium, Japanned	
dis 55&10 % dis 50&10 % dis 45&10 % dis 55&10 % sdis 55&10 %	Star (Coil)—For Cop'd, Nicl No. 4("Shoo Fly") Screen d No. 5 Screen Door Size	kel-Plated, &c., see list. loorsize, @ doz \$1.50 } # doz 2.00   dis
dis 40&10 %	Cable to Former Man a fire of	# doz 2.75   50 % # doz 4.00   #1.50; 3, #2; 4, #2.50, dis 30
dis 40&10 %dis 45&10 %dis 45&10 %dis 40&10 %dis 40&10 %	Sabin's BossNo. 1, W G	10#. \$4.00; 2, \$2.75; 3, \$2.00 
dis 40&10 % dis 40&10 % dis 40&10 %	Barker's Concealed	No. 2, \$15.00 @ doz, dis 50
dis as %	Hercules.  Drawing Knives.	dis 40
dis 35 % dis 25 % dis 20 % dis 25 % dis 25 % dis 25 % dis 25 %	Drawing Knives. Arlington Edge Tool Co. Crossman's No. 10. Merrill. Nobles Mfg. Co. Bradley's Adjustable Handle. Witherby Tool Co. Douglass.	dla 65&10 dla 65&5 dla 65&10
dis 25 % dis 25 % dis 25 %	Nobles Mig. Co	dis 15 dis 35 dis 20
	Douglass.  Drills and Drill Stoc	ks. dis 65&10
dis 70 % dis 45&10 % dis 70 %2 % ng," Nos. dis 70 % & 60 dis 70 %	Douglass  Drills and Drill Stoc Blacksmiths'. Blacksmiths' Self-Feeding. Blacksmiths' Self-Feeding. Blacksmiths' Self-Feeding. Breast, Hock kiss' Breast, Check kiss' Breast, Wilson's Breast, Burtholowmew's. Barchet, Merrill's. Barchet, Ingersoil's. Batchet, Weston's. Batchet, Weston's. Batchet, Weston's. Batchet, Woore's Triple Acti Whitney's Hand Drill. Wilson's Drill Stocks. Automatic Boring Tools.  Brill Chucks.	each, \$7.50, dis 20 dis 20&10 dis 20
dis 66% to %dis 45& to %dis 50 %	Breast, Wilson's Breast, Miliers Falls Breast, Bartholowmew's	each, \$3.00, dis 25 9each, \$2.50, dis 25 %10
	Ratchet, Merrin's	dis 25 5
dis 70& 10 % lis 66%&10 % , 1, 1%, 2, dis 60&10 %	Ratchet, Woore's Triple Acti Whitney's Hand Drill	ion
dis 25 % dis 55 % , dis 60&10 %	Automatic Boring Tools  Drill Chucks.  Morse's Beach Patent	each \$2.25, dis 20 %
	Morse's Beach Patent  Morse's Adjust  Danbury	each \$10.00, dis 30 %
dis 20 % dis 25 % dis 25 % 5 %	Elgg Heaters.  Dover. Monroe's. National. Family (T. & S. afg. Co.). Triumph (T. & S. Mfg. Co.). Elevator Buckets.	₩ dos \$2.50, dis 2 % dis 50 % ₩ dos \$4.50, dis 33½ %
50 36.50	Family (T. & S. afg. Co.) Triumph (T. & S. Mfg. Co.) Elevator Buckets.	
3.00, dis 25 % 7.50, dis 10 % dis 15@2c % 3.75, dis 20 %	Triumph (T. & S. Mg. Co.)  Elevator Buckets.  Mill E. Buckets. Hight, 31/6 to  Mill E. Buckets, heavy, 5 to	to in. (Duc's Improved)
7.50, dis 10 %	Storehouse (Due's Pat.), 12 to	F doz \$5.00 \$10.20, dis 10 % 17, \$12.00 @ \$20.00, dis 10 %
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dis 10&10 \$	Kettles Sauce Pans Tinned Sauce Pans	dis 45 % dis 25 % dis 25 %
	Escutcheon Pins. Brass. Escutcheous.	dis 50 %
dis 10% \$	Brass  Escutcheous. Door Lock. Escutcheous. Door Lock. Escutcheous. Door Lock. Escutcheous. Fenn's. Sohren's Pat. Fenn's. Sohren's Pat. Rubber Bail. Fenn's. Sohren's Patent Petroleum. West's Patent Petroleum. West's Patent Key. Idealite Key. Leather Lined. Ork Lined. Dieterprise (Self-Measuring). Sommer's Best Metallic Key. Sommer's Cork Lined, as q Fellee Plates.	discounts as Door Locks dis 55 %
dis 10%10 %	Fenn's Cork Stops	dis 40 %
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Sr, dis 10 %	West's Patent Key Setalite Key, Leather Lined Cork Lined	dis 45 %
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e) c) dis 35 %	Files, unburn M. Boynton's. A. Roynton's. A. Riley Carr A. Riley Carr A. Riley Carr Unbuson & Bro uncher's. Vaiter Speacer & Co.'s " Diam isher's. Coss & Gamble. I. Disston & Sons (new list). Geller Bros. 'Horse Rasps. icholson. ew American. nion File Co. Fluting Machines.	10nd "
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ss foc net E ss foc net C s fr.co net C	rown 4½ in., \$3.50; 6-in., \$4.00; rown Jewel	8-in., \$6.50 each, dis 25 % 6-in., \$3 40 each, dis 25 % 7-in., \$4.50 each, dis 25 %
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Hickory Firmer Chisel, assorted. \$\forall grcss.\$\\\ \\$\\\ \\$\\ \\$\\ \\$\\ \\$\\ \\$\\ \	dis
Socket Firming ( hise), assorted, \( \vert \) gross. 3.00   Socket Firming ( hise), assorted, \( \vert \) gross. 5.00   Socket Framing ( hise), assorted, \( \vert \) gross. 5.00   Auger, assorted, \( \vert \) gross. 5.00   Socket Firming ( hise),	G I
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# Hangers. Barn Door, old patters 8. dis 60 Barn Door, New England dis 60 Challenge C Hanger	\$ 50 % \$ 50 %
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Hinges.  Gate, Western	2000
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Rolled Plate	W WW
Heavy Welded 1100m ) L4 in, & up, \$6.00 \$ 100 m ( 20	8
Screw Hook and Eye $\begin{cases} \frac{76}{36} & \text{f.i}, & \text{gc} \\ \frac{34}{34} & \text{ii}, & \text{gc} \\ \frac{36}{36} & \text{ii}, & \text{100} \\ \frac{3}{26} & \text{ii}, & \text{132} \end{cases}$	8
Hoess Riveted Shank	KWW X
Wrought Strap and T list, Dec. 20, '77dis 40&ro&ro&ro Hees. Riveted Shank	AMMAN
Hick's Pat. Solid C. S. Scovill Patterndis 20\( \)\$	WWW.
Hooks.  Bird Cage, Sargent's list	MANAMA
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Coat and Hat, Sargent's list. Gis coctro Coat and Hat, Reading. dis 40&10 Picture Hooks, Brown's Pat. Solid Brass, \$4.00 %	DDD
Tassel and Picture (T. & S. Mfg. Co.)	BBPP
Picture Hooks, Brown's Pat. Solid Brass, \$4.00 et gross.         4.00 et s.5           Tassel and Picture (T. & S. Mig. Co.).         dis 25.           Tassel and Picture (T. & S. Mig. Co.).         dis 25.           Wrought Staples and Hooks and Staples. dis 60x5&tro.         wrought Staples, Stanley's list.         dis 60x5&tro.           Wire Screw Hooks and Eyes.         dis 55&tro.         dis 55&tro.           Grass and Bush.         dis 45@50         dis 45@50           Whiffletree—Patent.         dis 60x10         dis 60x10           Hooks and Eyes—Brass.         dis 60x10           Herse Nails.         dis 60x10	PN
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Light, Medium and Heavy   Prices ruling date the speed of shopes.   Prices ruling date and speed of shopes.   Prices ruling date and speed of speed	Bu Ha Hi
ce Axes, Small Cast or Malleable # doz \$1.70 dis 10 % (itchen Ice Tongs # doz \$2.25 net ombination Ice Tools # doz \$2.00 net [7 e1fties.	Ga Eu P. P.
The Brass, 7 to 13 inches inclusive. Which so not not inches inches. Which is 50 inches inches. Which is 50 inches inches. White inches	P. Dia
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et et et	HGERPP	ure use use . S.	nason Pliers ka Pl ell's l & W.	iers a Parali Cast Tinno	nd Ni el Steel. ers' C	Mfg. C ppers utting	Nipp	tting N	*****	dis 30 di di di di	& 10 % 8 50 % 8 40 % 8 25 % 8 35 %	
K KKKKKK	D St Cl	Plast an an	in's I	& L. & L. Paten	Co.'s Co.'s l t Adjust	Pat. A. Non-A. ustabi	djust djust	abio able able	dis	dis 65	\$ 40 % \$ 10 % \$ 10 %	
53	St Jo Po Do	and hn ock	dard l dard l son's et Lev s' Incl	Rule ( Rule ( Pater rels linom	co.'s No.'s No.'s Adj	lew Adon-Adustabl	ijust ljust le	able		ils 650 lis 650 lis 650 lis 650	tio \$ 210 \$ 210 \$ 210 \$ 210 \$	
%	Sa	nis	on Po	st Ho	le Dis	207		. P doz	\$37.	so, dia	20 %	
KHRRHH		Per	18 90 B 22 4	Ho	alim er	ud =1	sear	doz.				
MANA								Wand Waldon Waldon				
1 01000	Ja Ja Ja Ja Ha Ha	p'd ass p'd p'd y F y F	Screv Screv Side. Cloth ork, ork,	es Lin Solid : Anti	e Eye. Friet	ion '	Sw d Pat	ivel, 3	dis dis d 5.00, d	18 508 18 558 18 558 508 58 18 558 18 508 18 108		
THE STORY OF STATES	Bei Bei Spi	t o mis mis ring	Rack ches r Driv & Ca & Ca	e. ll Co. ll Co.	s Cas s Spr	t Steel	ios 8 Driv d So	2.00; 2.2 e doz \$7.	5; <sup>3</sup> 2.5 00, d1	o dis lis sod lis sod s sode,	SECTION SE	
The same of	R	nie id, ai	& Ca Tinne l. ding	Door,	wrou	ing an	d Che	ek	430	dis 4, dis	40 % 40 %	
						SILI	EL.	W foot	40. d 5.60	arge.		
1						82.1	0	2.70		3.30-	net	

February 9, 1882.	I .
Razor Straps.	Slates.
Razer Straps	Square Frames, by case
Company	Defiance Metallic dis 20&10 % Iron dis 45 % Wood dis 20 %
Hutt 5	Defiance Statives
Rivets.	
Rivets.  Iron and Tinned, new list, Dec. 10, 1881 dis 40%. In balk, new list, Dec. 10, 1881 dis 40%. Copper Rivets and Burrs dis 33 % Copper Rivets and Burrs dis 33 % Nos. 7 8 9 10 11 12 13 14 15 50 % Burs. 490 500 520 540 560 550 700 40 % Rivet Sets dis 40 %	Bonney's. \$\tilde{V}\$ dos \$10.00, dis 40\tilde{S}\$ Stearns' \$\tilde{V}\$ dos \$50.00, dis 20\tilde{S}\$ Stearns' \$\tilde{V}\$ dos \$50.00, dis 20\tilde{S}\$ Stearns' \$\tilde{V}\$ dos \$50.00, dis 20\tilde{S}\$ Stearns' \$\tilde{V}\$ dos \$50.00, dis 50.00, dis 50.0
## ## 490 500 520 540 560 580 600 650 700 40%  Rivet Sers	Spoons.  Basting
	Solid Table and Tea. dis 55 % Britannia dis 65 % Reed & Barton dis occurrent
Rods. dis 25 % Stair, Brass. dis 25 % Stair, Black Walnut. dis 40 % Stair, American Patent. dis 20 % Rollers.	Hall & Elton. dis 40&5&5 % Holmes, Booth & Haydens. dis 40&5&5 % German Silver
Rarn Door, Sargent's listdis 50&10&10 % Aeme (Anti-Friction)	Cast Steel, Silver Plated dis 33/5 % Tin (P. S. & W.), Teas. \$1.25 \new gross, net
Rope. Mnfs' Net Lit, Oct. 5, 1881, dis on 5000 B and	Spoons
Manila     Manila   Manila     Manila     Manila     Manila     Manila     Manila   Manila     Manila     Manila     Manila	
Manila, Tar'd Rope. # b 15\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Hindostan No. 1, 6c; Axe, 8cdis 20&10 % Hindostan Hacker Stone
Mnfs' Net Li t, Oct. 5, 1881, dis on 500 m and over	Washita Stone
Sisal, Hay Rope	Arkansas Stone No. 1. 4 to 6 in
Ntandard dis 66%&10 % dis 55&10 % Stanley dis 66%&10 % dis 55 % of the stanley dis 66%&10 % dis 55 %	Turkey Slips (Chase). 4 to 8 in., \$1.00 \( \psi \) b Turkey Slips (Chase). \$2.50 \( \psi \) D dis 10 \( \psi \) Lake Superior (Chase). \( \psi \) D 20c, dis 10\( \psi \) S
Stephens From 4to 10 B.	
Self-Heating Tailors & doz \$18.00 net Gleason's Shield and Toilet dis 25 %	Joseph Dixon's
Mrs. Pott's Irons. Square Back. dis 35&5 % Mrs. Pott's Irons. Square Back. dis 35&5 % Enterprise Star Irons. dis 40&5 %	Stove Polish   Joseph Dixon's   P gross \$6.00, dis 10 % Gem   P gross \$4.50, dis 10 % Geold Medal   P gross \$4.50, dis 25 % "Mirror"   P gross \$6.00, dis 25 % "Mirror"   P gross \$0.00, dis 25 % Ruby   P gross \$3.75, net Rising Sun   P gross \$3.75, net Dixon's Plumbago   P gross \$7.5, net Dixon's Plumbago   P gross \$7.5, net Sungres.
Combined Fluter and Sad Front & doz \$15.00, dis 15.50  Sand Paper.  Raeder & Adamson's Flint, 2, 24.6 & 3. 5.25 % ream  Bacder & Adamson's Flint, 4.850 ried. 47.5 % ream  Bacder & Adamson's Flint, Assorted. 47.5 % ream  Bacder & Adamson's Star 37.5 % ream  Haeder & Adamson's Emery. % ream \$6.50 @ 11.50  Bartles Flint, Same list as B & A	Dixon's Plumbago
Baeder & Adamson's Flint, Assorted. 475 Fream Baeder & Adamson's Flint, Assorted. 475 Fream Baeder & Adamson's Star. 375 Fream	Squares.  Steel. ds 50 %; full cases, dis 50 %; of 5 %; fron ds 50 %; full cases, dis 50 %; full cases, dis 50 %; of 5 %; full cases, dis 50 %; of 6 %; of 6 %; of 6 %; of 7 %; of 6 %; of 7 %; of 7 %; of 8 %
Bartles Flint, same list as B & A	Try Square and T Beveis
New England, same if-t as B. & A. Flintdis 30 % Gage'sdis 30 % 5 %	Placks, Brads, &c. List of April 2, 1880. Tinned Swedes Tacks
Sash Cord.	Tinned American Tacks. dis 60 % Swedes Tacks, all kinds. dis 40 % Copper Tacks and Natis
Silver Lake, Hemp	Swedes Hungarian Nalis dis 33/3 5 Gimp and Lace Tacks dis 33/3
Raw Hide	Finishing Nails. dis 30 % o Trunk and Clout Nails. dis 30 % o Common and Patent Brade dis 30 % o
Sash Locks. Clark's, No. 1, \$10.00; No. 2, \$8.00 per grossdis 33\% % Energypon's	Basket Nails. dis 25% B Brush Tacks dis 25% B Leathered Carnet Tacks
Walker's net Hammond's Window Springs dis 25 % Northun Window Springs. No. 1. \$10.00 \$ gross dis 15 \$	American Cut Tacks dis 33 % Cigar Box Nalls dis 33 % Cigar Box Nalls dis 33 % %
Sash Locks.  Clark's, No. 1, \$10.00; No. 2, \$8.00 per gross	Winterbottom's Try and Miter dis 20%10 \$  Vacks, Brads, &c. List of April 2, 1880, Tinned Swedes Tacks. dis 60 \$  Tinned American Tacks. dis 60 \$  Swedes Tacks, all kinds, dis 40 \$  Copper Tacks and Nails. dis 33½ \$  Swedes Hungarian Nails. dis 33½ \$  Swedes Hungarian Nails. dis 33½ \$  Swedes Hungarian Nails. dis 33½ \$  Simp and Lace Tacks, dis 30½
	Common and King
Solid Eyes, in 500 B lots and over B b 134c net Sausage Stuffers or Fillers.	Tapes, Measuring.  American
Sausage Statters of Filters   \$\psi\$ doz \$20 dis 30 \( \pi\$ Perry \) \$\pi\$ doz, No. 15; No. 0, \$21, dis 30 \( \pi\$ Straw Cut No. 4 \) each \$\pi_{00.00}\$ dis 20 \( \pi\$ Enterprise Mfg. Co \) dis 25 \( \pi\$ Silvers \) dis 25 \( \pi\$ Silvers \) dis 25 \( \pi\$ Silvers \)	Tin Cose
Enterprise Mrg. Co	Tobacco Cutters.   dis 72&10 \( \)
Disston's Circular.   dis 40 %   Disston's Mill   dis 40 %   Disston's Cross Cut   dis 40 %   dis	Wood Bottom
Disston's Hand, Panel, Rip, &c	Toe Calks.
Boynton's Billet Webs, 30 inch. new list	Winsted. # 5 cc, dis 5 % Tiuners' Tools and Machines. Machines (P. S. & W.). list add 20 % Tools (P. S. & W.). add 6 %
Wheeler & Ciemson Mfg. Co.'s Hand	Tools (P. S. & W.). add 6 % Transom Litters. add 6 % Wollensak's Patent
Livington's Framed Wood— NOS 101 102 103 104 105 Per dox \$10.00 8.50 10.00 7.50 6.20 net	Transom Litters.  Wollensak's Fatent. Richer's Patent, new list, Feb., 1892. dis 208108 to 8  Excelsior dis 5081082 8
Silver's	Traps. Game, Newhouse
Saw Rods. \$10 Hat, digno & 54 Haw Heis. Boynton's Patent X Cut, per doz, \$12.00; Hand Saw	Traps.   Game, Newhouse   Gis 5,5
Saw Fels.   Saw	Mouse, Catchem-alive # doz #2.50, dis 10 % Rat, "Decoy" # doz #10.00, dis 10 %
Common Lever. No. 0, \$8.60; No. 1, \$15.00, dis 15.5 Leach's No. 1, \$8.50; No. 2, \$5.5c, dis 20&10 \$ Nash's No. 1, \$8.50; No. 2, \$5.5c, dis 20&10 \$	Trowels.   Lotrops   Brick and Plastering   dis 25
Hammer, Bottlass.  Hammer, Benis & Call Co.'s new Patentdis 30&5 %  Bemis & Call Co.'s Lever & Spring Hammer. dis 30&5 %	Peace's Plastering
Bemis & Cali Co.'s Cross Cut. dis 12% & Aiken's Genuine \$3.00, dis 50&10 \$	Brades' Brick dis 20 g Werrall's Brick and Plastering dis 20 g Garden dis 20 g
Alkel's Patent Lover dis 20 %  Disston's	Triers. Butter and Cheesedis 25 %
Morrill's No. 1, \$15; No. 5, \$52, dits 36\$to 5   Macales   Morales   Mor	Trucks (Warehouse, &c.) Penfield Block Co. dis 30 % Vises. Vises. List of July 1, '79, dis 30 % Solid "Crwn" (A. H. Hildick). 40 to 100 B, 15c net Solid, Peter Wright's. 15/4c Solid, Wikinson's.
Hatch, Tea, No 101 402 \$1500, this 375cctlos Union Platform \$6.00, dis 45 Fairbanks'	V Solid BoxList of July 1, '79, dis 30 % Solid "Crown" (A. H. Hildick)40 to 100 B, 15c net
Buffalo Scale Co	Solid, Peter Wright's
Chatillon's Grocers Chatillon's Cureka dis 25 % Family Universal dis 50 %	Solid, Peter Wright's 151/sc Not No S, 154 No Solid, Peter Wright's 151/sc Solid, Wilkinson's 151/sc Solid, Wilkinson's 151/sc Parallel, Parker's dis 15 Parallel, Howard's dis 26% 10 S Parallel, Howard's dis 26% 10 S Parallel, Merrill's dis 15 X Parallel, Backun and Union dis 40 S Parallel, Backun and Union dis 40 S Parallel, Double Screw Leg dis 156 10 S Parallel, Double Screw Leg dis 156 10 S Parallel, Prentis dis 156 10 S Parallel, Prentis dis 156 10 S Parallel, Simpson's Adjustable dis 26% 10 S Aw Filers, Boancy's double Screw Leg dis 26% 10 S Saw Filers, Stearn's dis 26% 10 S Saw Filers, Hopkins' double Screw Leg dis 26% 10 S Cowell fand Vises dis 26% 10 S Cowell fand Vises dis 25% 5 Richardson's Vise and Anvi dis 25% 5 Richardson's Vise Richardson's
Family Favorite Family, Turnbull's	Parallel, Sargent's. dis 55\$10 \$ Parallel, Backus and Union dis 40 \$ Parallel, Oval Slide dis 65
Scrapers. Adjustable Hox Scraper (S. R. & L. Co.), \$6.50, dis 20&10 5 Box, 1 Handle	Parallel, Double Screw Leg. dis 15&10 5 Parallel, Prentiss. dis 25 9 Parallel, Simpson's Adjustable dis 25 6
Box, 2 Handle # GOE #0.00, dis to 5 Defiance Box and Ship dis 20&10 \$ Foot	"Family," List. net Saw Filers, Bonney's P doz \$24.00, dis 20&10 5 Saw Filers, Steam's dis 20% 10 5
Ship, common	Saw Filers, Hopkins' # doz \$17.50, dis to \$ Reading dis 45&10 \$ Cowell Hand Vises dis 25 \$
Screw Drivers.  Douglas Mfg. Co. dis 20& to& 10 5  Douglas Mfg. Co. dis 40 5  Disston's Fatent Excelsior. dis 45 5  dis 45 5	Richardson's Vise and Anvildis 25 % Washer Cutters,
Buck Bros	Washer Cutters.
Sargent & Co. 8	Washers See Nuts and Washers
Disaton's Patent Excelsion	Wire. Brass and Copper, list of June 10, 1880
Cowles Hdw. Co., No. 1 Extra. dis 4002.0 5 Cowles Hdw. Co., No. 1 Extra. dis 4002.0 5 Cowles Hdw. Co., No. 1 Extra. dis 4002.0 5 Cowles Hdw. Co., No. 1 Extra. dis 4002.0 5 Cowles Hdw. Co., No. 4 and co. dis 30 K Clark's Patent. dis 25 K Screws. dis 25 K Screws. That Hd Iron. New list April 27, 1881. dis 30 K Round Head iron. New list April 27, 1881. dis 25 K Hat Head Brass. New list April 27, 1881. dis 25 K Round Head Brass. New list April 27, 1881. dis 25 K Round Head Brass. New list April 27, 1881. dis 25 K Round Head Brass. New list April 27, 1881. dis 25 K Round Head Brass. Sew list April 27, 1881. dis 25 K Round Head Brass. New list April 27, 1881. dis 25 K Round Head Brass. dis 25 K Round Head, Iron. dis 55	Bright and Annealed
Flat H'd Iron New list April 27, 1881 dis 30 % Round Head Iron. New list April 27, 1881 dis 25 % Flat Head Brass New list April 27, 1881 dis 30 %	Coppered
Round Head Brass. New list April 27, 1881. dis 20 % Brass and Silver Capped. dis 40 % Japanued, list of Plain Screws. dis 20 %	Cast Steel       dis 40 %         Tinned Broom Wire, Nos. 18 to 25       dis 55 %         Annealed Fence, Nos. 8 & 9       dis 55 %         4 55 %       52 %
Coach, Patent Gimiet Point dis co & Coach, Common or Lag. dis 6 & Red. dis 16 & S	Annealed Grape, Nos. 10 to 14
Machine, Flat Head, Iron. dis 55 % Machine, Round Head, Iron dis 56 % Bench, Iron. dis 55 % 10 %	Fence Staples, Galvanized.
Bench, Wood, Beech dis 20210 K Bench, Wood, Hickory dis 20210 K Hand, Wood dis 20210 K	Japanned Barb Fence. 9 8 84c Gavanized Garb Fence. 9 D 94c
Hand Rail, Humason, Beckley & Co.'s	Turner & Seymour Mfg Co., Picture Wire, low list dis 40 %
Jack (Wilson's).  **Serew Window Balances.  R. B. Hugunin's	Judd's Picture Wire. dis 40 5 Clothes Line Wire, Galvanized. ≱ coil 25 € 40c net Wire Cloth, green and drab. ₽ 8q. ft., 24c net
Scroll Saws. dis 20 %	Wrenches. American Adjustable
Seroll Saws   dis 20 %   Rogers, \$3.50.   dis 25 %   Shears and Scissors.   dis 25 %	Baxter's Disgonal  dis 20&5 %   Coes' Genuine  dis 40&210 %   Coes' "Mechanics"  dis 40&210 %  dis 40&
American (cast) 1701	Coes' Pattern Malleable dis 75 % Coes' Pattern Wrought dis 65 % Girard Standard dis 5 5
Shears and Scissors.	Bemis & Call's Patent Combination
Mass. Cutlery Co. St. Trimmers. dis 33½ % Mass. Cutlery Co. St. Trimmers. dis 75.8	bemis & Call's Cylinder or Gas Fipe dis 25 % Bemis & Call's Cylinder or Gas Fipe dis 45 % Van Wagoner & Williams' Basin F dos 24 co
Sheaves.  M. W. & Co., list dis 40&2 % Sliding Door, M. W. & Co., list dis 60&10&2 % Sliding Door, R. & E. list dis 60&10&2 % Gliding Door, Patent Roller, Hatfield's dis 60&10&2 % Sliding Door, Russell's Anti-Friction dis 60&10&2 % Sliding Door, Russell's Anti-Friction dis 60&10&2 % Sliding Shutter, & E. list dis 50&10&3 % Sliding Shutter, Ragent's list dis 50&10 % Sliding Shutter, Sargent's list dis 50&10 % Sliding Shutter, Sargent's list dis 50&10 % Sliding Shutter, Rading list dis 50&10 % Moore's Anti-Friction (Hanging) dis 46 % Moore's Anti-Friction (Hanging) dis 46 %	Wire Cloth, green and drab. \$ \$9, ft, 25c net Wrenches, American Adjustable "S," list Jan., 1860. dis 265, 5 Baxter's Adjustable "S," list Jan., 1860. dis 265, 5 Baxter's Diagonal dis 265, 5 Baxter's Diagonal dis 265, 5 Baxter's Diagonal dis 265, 5 Coes "Genuine dis 265, 6 Coes "Pattern Wrought dis 50 6 Girard Standard dis 50 5 Girard Standard dis 50 5 Girard Standard dis 50 5 Bemis & Call's Patent Combination dis 26 Bemis & Call's Patent Combination dis 25 Bemis & Call's Briggs Pattern dis 35, 8 Bemis & Call's Call's Diagonal dis 50 5 Bemis & Call's Call's Diagonal dis 50 5 Bemis & Call's Call's Diagonal dis 50 5 Bemis & Call's Ca
Sliding Door, Patent Roller, Hatfleld's. dis 60&10 & 2 % cliding Door, Russell's Anti-Friction. dis 60&10 & 2 % cliding Door. Moore's Anti-Friction. dis 4 % dis 4 %	Wringers, Per dor. Universal XX, No. 216
Sliding Shutter, R. & E. list. dis 50&10&2 % Sliding Shutter, Sargent's list dis 50&10 % Sliding Shutter, Reading list dis 50&10 %	Universal, XX, No. 16. 71.60 Universal, XX, No. 16. 71.60 Universal, XX, No. 1 93.00
Moore's Anti-Friction (Hanging). dis 45 %	Universal, XX, No. 12 each 12.00 Universal, XX, No. 12 each 25.00 Universal, XX, No. 18 each 25.00
Shovels and Spades.  Ames, New list, July 1, 1881.  Grimths Gid Août 0 8  Old Colony.  Payne Pettebone & Son, new list.  dis 40 8 10 8 10 8 10 8 10 8 10 8 10 8 10 8	Universal AA, NO, 10. each 25,00 2 Universal XX, NO, 22. each 32.00 2 Peerless, No. 0, no Cogs. 51.00 2 Peerless, No. 1, no Cogs. 54.00 2 Peerless, No. 2% with Cogs. 60.00 2
Payne Pettebone & Son, Rew 119t. dis 402 to % Payne Pettebone & Son, R. R. Shovels dis 15 Remington's (Lowman's Patent). dis 26 %	Peerless, No. 2, with Cogs. 63.00 Peerless, No. 3, with Cogs. 63.00 71.00 Peerless, No. 4 with Cogs. 71.00
Rowland's dis 40210 %  Shevels and Tougs. Shovels and Rougs. Council State Head, E. & E. list. dis 6021022 %  Foliand Steel, new list. dis 5021022 %	Wrisers   Commission   Commis
Pollahed Steel, new list	Excelsior, No. A

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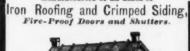
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With which the Sashes work as with weights, their application being at an expense of one-half the cost of applied weights, no boxings being required. The Sashes are Locked with the meeting rail lock. Stands alone in its working. Frice & per set (four.) Discount to the trade. In suc over three years, Robt. B. Hegunin, Sole Maker. Hartford, Ct., C. S. A.

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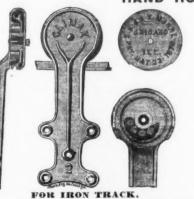
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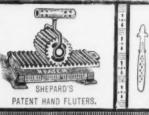
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METALS. RON.—Duty. Bars, 1 to 14c. ₹ 5; Sheet, Band
RON.—DUTY. Bars, 1 to 1%c. 單 數; Sheei, Band Hoop and Scroll, 1%10 1%c. 單 數; provided, that none of the above from shall pay a less rate of duty than 25, per cent. Pig, \$7 ** ton; Pollshed Sheet, 26. ** 数; Wrought Scrap, 88 ** ton; Cast Scrap, 86 ** ton. Rail- road, 70c. ※ 100 %. Boller and Plate, 1%c. ※ 数.
Foad, 702. \$\psi\$ 100 B. Boller and Plate, 156. \$\psi\$ \$\psi\$.  American Iron. Foundry, No. tx. \$\psi\$ ton \$26.50 @ 27.00 Foundry, No. 2x. \$\psi\$ ton 25.00 Gray Force. \$\psi\$ ton 24.00 Scotch Iron.
Gray Forge. \$\vec{\psi}\$ ton 24.00 Scotch Iron. \$\vec{\psi}\$ ton 24.50 \$\vec{\psi}\$ 20.00 Comprise to arrive: \$\vec{\psi}\$ ton 24.50 \$\vec{\psi}\$ 20.00
Septem 1   1   1   1   1   1   1   1   1   1
Redear No. q P ton 32.40
Iron, a mill
Scrap. Waought Scrap \( \Psi\) ton, from yard \( \frac{2}{33.00} \) \( \text{33.00} \) \( \text{33.50} \) Wrought Scrap, to arrive \( \frac{3}{31.50} \) \( \text{32.00} \) \( \text{32.00} \)
Common ir u:
1
Rods—% and tr-15 round and square. # h 6 3.rc Bands—1 to 6x3-rt to No. 12. # h 6 3.pc Norway Nail Rods. 54 6 5%c
Sheet Iron,
28
21 to 24.
COPPERDUTY: Pig, Bar and Ingot, se; Old Cop-
American Incot W h See Trade Report
SHEATHING BRAZIERS COPPER, BOLTS, &C. Brazier. Copper, ordinary sizes, 16 os. per sq. ft., and o er & B
Braziers' Copper, ordinary sizes, under 10 cs.  # b 32c Braziers' Copper, 10 cs. and 12 cs., # sq. ft. # b 34c Braziers' Copper, Lighter than 10 cs. # sq. ft. # b 36c
Circles less than an and over. \$\psi\$ 3500 Circles \$4\pm\$ in diameter and over. \$\psi\$ 3500 Segment and Pattern Sheets. \$\psi\$ 350 Locomotive Fire Box Sheets. \$\psi\$ 3500 Segment and Pattern Sheets. \$\psi\$ 3500 Segment and Pattern Sheets. \$\psi\$ 3500 Segment and Pattern Sheets. \$\psi\$ 3500 Segment Sheets. \$\p
Sheathing Copper, over 13 02. 4 34. 11. 4 30. 18 300. Bolt Copper Bottoms. 4 3 30 Copper Bottoms. 4 3 30 I No Copper is Sheathing except 14% inches, and not do exceed 34 02. to the 8q. ft.
74x48 \$\psi\$ sheet 6c   1
24x8 w sneet oc All other size Sheets, 2½0 W sq. ft. For tinning both sides, double the above amount. O'NEILS PATENT FLANISHED COPPER.—Net. 14x8.
14 and 16 oz. and heavier. W m 37c By the case. W m 36c s oz. and lighter W m 40c " w m m 39c s
7 in., 14X50. 8 ln., 14X50. 9 ln., 14X60. 14 and 16 oz. and heavier \$\mathbb{B}\$ 29c By the case. \$\pi\$ 38c S And lai sizes not over zo in. wide.) 2444830X50. 14 and 16 oz. and beavier
BRASS.
Brown & Sharp's Gauge the Standard for Wire. Old English Gauge the Standard for Wire.  BRASS MANUFACTURERS' PRICE LEST.—dis. 20 @ 25 %.  June 10, 1880. For less and the Control of the Co
ties than 100 Bs add 3c. W B.
All Nos. not thinner than to No. 38, wider than 2 N in, not wider than 1 in
All Nos. to No. 28, inclusive. and widths over 30 90 30 in., inclusive
clusivo. All Brass thinner than No. 8 is Platers' Brass, at
Sheets wider than 30 in. and under 40 in. 450 K  40 in. and over
1
c & h more than High Brass.
Platers' or Gold Metal Sawed 51c Bl Planed or Pollshed 54c Property of the Property of
Metal, in width 1 in. to 1/2 in. to No. 28, inclusive, 10 F B advance.  Metal, in width 2 in. to 1 in. thinner than No. 28, 20 F B 8t
ndvance.  Metal, in width 1 in. to 1/4 in. thinner than No. 28, 30 # 5 advance.  Metal in width 1/4 in. to 1/4, inclusive, not thinner than
advance. Metal in width 1/4 in. to 1/4, inclusive, not thinner than No. 28, 20 P is advance. Metal. in width 1/4 in. to 1/4 thinner than No. 28, 50 P is advance. Metal. 4 in. in width and less, 100 P is advance. Bit
advance.  Metal, ½ in. in width and less, too \$\mathbb{B}\$ advance.  Any of the above widths cut to particular lengths, add  70 \$\mathbb{B}\$.  OERMAN SILVER MARKET METAL AND WIRE.  Market Metal. Wire  Bl
4 per cent., 12 inch to No. 26
German Silver Sheets over 12in, wide and weighing
Advance 2c. 101 can administration with an Nos. 26 to Gr. 21 in. and 2c. 7 no on each No. thinner than Nos. 26 to Gr. 36, inclusive.
German Silver Scrap, one-half less than net price of rain. Market Metal. German Silver Turnings, Filings Inc.
BRASS AND COPPER WIRE. Gild'g and Mi
No. 21
No.24 40 41 59 Ro No.25 43 47 53 Sig No.26 44 49 55 Sig
NO.29
No.31. 62 66 79 Un No.32. 66 70 64 Un No.32. 70 74 93 Ve No.33. 70 74 93 Ve Spring Wire se ¥ B advance.
on Round Wire.
Brass Rods, No. 8 and larger, not less than 2 feet Ye lengths, 380.
not less than 2 feet lengths, 43c. Wire and Rods less than 2 feet lengths, special rates. Twelve cents per 2 extra for spooling on 1 2 spools.
MISCELLANKOUS.   \$0.40
High Brass Scrap.
Terms-Net cash. Interest to be adde after thirty Ble
Nos. 21, 22, 23, two cents advance on List for each Dri
Nos. 24, 25, four cents advance on List for each Number. Above No. 25, special rates.
Plain, % inch. Lie Plain, % inch. Lie Plain, % inch Lie All Mandrel Drawn Tubes, % cents advance on List Frices.  Min
anglish, Scotch and Extra Patterns Fancy Tubing Ass
Tubing Sawed or Cut 2 to 4 feet long, 2 cents advance on List.  Add to cents 16 cent for each additional cutting under 23 feet

_		-
	All Mandrel Deams Puber and at \$4 to a contract	
	All Mandrel Drawn Tubes under % in. 2 cents per pound advance.	
nd	Plain. Fancy Francy Fra	27
ne	French and Extra Patterns	33
b :	GERMAN SILVED TERRINGdis to %	30
n.	4 Per cent.	Bo
	6 Per cent 9 Per cent 12 Per cent	00
00	The Powers	
.00	16 Per cent	22
.00	2 Per cent.	00
00	valued at 70 P B. or under, 240: over 70 and no	B,
50	above 11, 30 W B; over 11, 350 w B, and 10 % ad va	1.
00	18 Per cent. 2 Per cent. 3 Per cent. 3 Per cent. 3 Per cent. 4 Per cent. 4 Per cent. 5 Per	e
40	whatever form or description, shall be classed as	I
00	American Cast Steel. For American Steel see quotations under heading o	
00		
00	English Steel.	c
	Best Cast. W b 1514	c
50	Round Machinery, Cast. We bloc Swaged, Cast. While Best Double Shear while Illister, ist quality his igg German Steel, Best his igg declaration of the state of the state of the state of the ad quality. We bloc	
	Blister, 1st quality	0
6	German Steel, Best. 9 110 2d quality 9 100	
0	2d quality. W B 100 3d quality B B 9c Sheet Cast Steel, 1st quality. W B 15564	
C	Sheet Cast Steel, 1st quality	0 10
C		
e	ANTIMONY	
e	Pipe and Sheet, 2%C W D.	
	American	t
l.	Bar	
	Sheet8c, dis to 9	
	Chilled Shot	
	_A. 2% ;B. 200 ; C. 1%.	1
Į	N. P. U	1
1	tures of, not enumerated, 35 per cent. ad val. Bars,	1
1	per cent.	1
1	Banca.	1
	English	ı
	C 10X14   Prime Charcoal	1
	I C 14x20 \ I C 12x12 Prime Charcoal 6.75@ 2.00	ı
	I X 10X14 Prime Charcoal 8.25 @ 8.50	ı
	IX 12x12, Prime Charcoal	1
1	X	1
1	For each add tional X add2.00	1
	COKE TIN PLATE.	ľ
	I C 10X14 }	l'
	I C 10X14   6.86.25   85.75 @ 6.00   C 12X12   9 6.50   6.00 @ 6.35   TERNE PLATE.  Prime Char. od Qual. Coke.   I X 14X20.   85.75 @ 6.00   5.50   5.75   6.525   X 14X20.   7.50   6.00   1.50   1.175   6.11.00   1.20   1.50	ı
	Prima Char od Onel Coke	
	I C 14X20. \$5.75 \( \frac{6}{9}.00 \) \$5.0 \( \frac{5}{9}.00 \) \$5.0 \( \frac{5}{9}.00 \) \$5.75 \( \frac{6}{9}.00 \) \$5.75 \( \frac{6}.00 \) \$5.75 \( \frac{6}{9}.00 \) \$5.75 \( \frac{6}{9}.00 \) \$5.75 \(	
L	I X 14x20 7.50 @ @ @ @ 11.00 I 11.75	
	IX 20X28 15.50 @ @ @	П
1	1 C 14xxxx	
1	Extra	П
1	NO. I	
1	SPELTER DUTY: In Pigs, Bars and Plates, \$1.50	
1	American, cash	1
1	2346 W B.	1
1 5	American, cash	1
1		-
	Paper Stock, &c.	-
	- where second, acco	

	(Dealers' Solling Prices.)	
	(aretiters sources)	Conta 20 %
	White Shirt Cuttings, No. 1	
,	White Shirt Cuttings, No. a	1 4 1
	Mill Assorted Whites	140 1
١	Unbleached Muslins	602 60
i	City Whites, No. 1. New Canton Flannels.	414 64 6
	New Canton Flanneis	6 4 6
9	New Seconds, light	286 64
٦	New Seconds, dark	212 6 25
1	No. 2 Whites	284 @ 27
١	Cotton Canvas	41/4 47
	Linen Canvas, No. 1.	7 2 1
1	Seconds, City No. 1	186 0 1
١	Seconds, City No. 2	14 6 13
	Colors, per 100 bs.	8714 @ 1.0
ij	Manila Rope	314 @ 33
d	Manila Rope, Tarred	214 (0 21
	Gunny Bagging, No. 1	24 @ 3
1	Gunny Bagging, No. 2.	134 @ 2
۱	Kentucky Bassing	414 (i) 414
d	Burlap Bagging, No. 1	294 60 3
	Tar Shakings	2 @ 25
1	Hemp Twine Stock	436 60 45
1	Hard White Shavings, No. 1	414 @ 414
1	Soft White Shavings, No. 1	@ 95
1	White Shavings, No. 2 soft	@ 33
1	Mixed Shavings, part white	236 @ 3
ł	Ledger and Writing	334 @ 354
1	Solid Stock	354 @
1	Book Stock, No. 1, light	114 @ 114
ı	Old Newspapers	176 @
1	Pure Manilas	236 @ 23
1	Bogus Manilas and Hardwares	1 @ 11
1	Commons per too lbs	ds 66
1	Binders' Board Cuttings	256 @ 254
ŧ	Straw Board Cuttings	I
1		

#### Paints, Oils, &c.

	Black Lamp, Coach Paints.  Black Lamp, Ordinary  Black Lamp, Ordinary  Black Ivory Drop, fair  Black Paint, in Oil.  Black Faint, in Oil.  Black
	Paints.
1	Black Lamp, Coach Painters W B 20
1	Black Ivory Drop, fair
ı	Black Ivory Drop, best
Į	Blue Prussian, fair to best
ĺ	Blue Prussian, fair to best, in oil
1	Blue Ultramarine18 @ 30
1	Brown, Spanish
I	Green, Chrome
I	Green, Chrome, 18 oil
ı	Green, Paris, in oilgood, 300; best, 45
l	Iron Paint, Brown B 15
Į	Iron Paint, Purple
ì	Iron Paint, Ground in oil, Red B 5
1	Iron Paint, Ground in oil, Brown
I	Mineral Paints 3 @ 4
I	Red Lead, American
Ī	Red Venetian (Eng.) dry
l	Red Indian dry
Į	Rose Pink
I	Sienna, Burnt45
l	Sienna, Raw
ł	Umber, Burnt In all
l	Umber, Raw
l	Umber, Raw, in oil
l	Vermilion, English
١	Vermilion, American, Common
ł	White Lead, American, pure dry
Ì	White, Paris, English, primein bbls. 2 @ 250
ı	Yellow Ochre, French, in oil, asst'd cans, vic. kers, 8
ĺ	Yellow Ochre, Vermontin casks, 116
ŀ	Yellow Chrome. in oil
l	Zinc White, American No. 1, dry
I	Zinc White, French (Paris) dry
l	Zinc White, French, in oil
l	Linseed, Raw, in casks and bblsgal. 60 @ 690
l	Bleached Whale
l	Bleached Sperm gal.\$1.2
ŀ	Signal
ŀ	Prime Lard
	West Virginia16c @ 200
	Mineral Off
	Fish Oil, pressed400 @ 450
	Tailow
	Empire Cylinder Oil650
	Engine
	Mineral Wool, ordinary.
	Mineral Wool, extra # 3 30
	Asphartum Cuban
	Bensine
	Chalk Block

Frostings		******		4
diue, white	*******			24 (6) 3
Glue, Sheet				2
Glaziers' Points, Zinc		******		******
Gum, Copal				3
Gum, Damar			******	2
Gum Shellac, English		*****		4
Gum Shellac, English, da	FK		******	4
Litharge, English Pumice Stone, selected L			******	75
Pumice Stone, selected L	umps			4@
Punice Stone, Powdered				29
Pine Tar, bbls		******	******	*****
Pitch Putty, in bladders	*******	******	******	
Pucce in built	*******		*******	3
Putty, in bulk Rosin—Common and Goo	A Citani			*****
E&F	u-erran	пец		(3)
G & H	******			(4) WZ.
I & K	******			(0) 82.
M&N	******		#2 Ho	G 23.
Spirits Turpentine			03.00	0.00
Whiting Spanish			74	C 00 2
Waste, No. 1 Cop.				79
Waste, No. 1 White Machin	ne			
Waste, No. 1 Cop	ne			014
Waste, No. 1 Colored	ne		******	914
Waste, No. 1 Colored Waste, No. 2 Colored	ne			9¼
Waste, No. 1 Colored Waste, No. 2 Colored	ne			9¼
Waste, No. 1 Colored	ne			914
Waste, No. 2 White Machi Waste, No. 1 Colored Waste, No. 2 Colored Waste, Washed Machine	ne			914
Waste, No. 2 Colored Waste, No. 1 Colored Waste, No. 2 Colored Waste, Washed Machine.	nss.			914
Waste, No. 2 Colored Waste, No. 2 Colored Waste, Washed Machine	nss.	of 50 f		914
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Waste, No. 2 White Machine Waste, No. 1 Colored Waste, No. 2 Colored Waste, Washed Machine  Prices current New list, Ja Single	ass. ser box nuary	of 50 f	eet.	614
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Waste, No. 2 White Machine Waste, No. 1 Colored. Waste, Ne. 2 Colored. Waste, Ne. 2 Colored.  Prices current 3  New list, Je  Single  BIZES.  6 X 8 to 10 X 15.  Il X 14 to 16 X 24.	ass. er box nuary : Thick.   ist.   li.to	of 50 ft 7, 1882. 2d. 8 9.25 10.75	gd. \$ 0.00 10.25	4th.
Waste, No. 2 White Machine Waste, No. 1 Colored. Waste, Ne. 2 Colored. Waste, New 1 St. Single Sizes.  6 x 8 to 10 x 15.  11 x 14 to 16 x 24.  18 x 24 to 20 x 30.	ass. er box nuary : Thick. 11.50	of 50 f. 7, 1882.  2d.  9,25 10,75 13,75	gd. \$ 0.00 10.25 12.50	40h.
Waste, No. 2 White Machine Machine, No. 1 Colored Waste, Ne. 2 Colored Waste, Ne. 2 Colored Waste, Washed Machine Single Street Single EIZES Sto 10 x 15 II X 14 to 16 x 24 IS X 2 to 20 x 30 St. X 36 to 3 x 30 St.	ne. per box nuary : 5 Thick. \$10.00 11.50 14.75 10.50	of 50 f 7, 1882. 2d. \$ 9.25 10.75 13.75 14.75	30. \$ 0.00 10.25 12.50	40h.
Waste, No. 2 White Machine Maste, No. 1 Colored Waste, No. 2 Colored Waste, No. 2 Colored Waste, No. 2 Colored Waste, Washed Machine Single Sizes. 6 x 8 to 10 x 15 11 x 14 to 16 x 24 18 x 2 to 20 x 30 15 x 36 to 24 x 39 30 x	ne	of 50 f. 7, 1882. 2d. 8 9.25 10.75 13.75 14.75	gd. \$ 0.00 10.25 12.50 13.00 14.00	40h.
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Waste, No. 2 White Machine Machine, No. 1 Colored. Waste, No. 1 Colored. Waste, Washed Machine.  Prices surrent; J New list, Jd Single SIZES.  6 x 8 to 10 x 15.  11 x 14 to 6 x 25.  15 x 36 to 24 x 20.  26 x 36 to 26 x 44.  26 x 46 to 30 x 50.	Ras. mer box muary : Thick.   18t.   10.00   11.50   10.50   17.50   17.50   18.75   20.50   22.75   24.00	of 50 f 7, 1882. 2d. 8 9.25 10.75 13.75 14.75 16.00 17.34 19.25 21.00 22.00	\$ 0.00 \$ 0.00 10.25 12.50 14.00 14.50 16.50 19.75	40h.
Waste, No. 2 White Machine Maste, No. 1 Colored. Waste, No. 1 Colored. Waste, Ne. 2 Colored. Waste, Washed Machine.  Prices current 3  New list, Je  Single  6 x 8 to 10 x 15.  11 x 14 to 16 x 22.  18 x 2 to 20 x 30.  26 x 28 to 14 x 30.  26 x 36 to 34 x 30.  27 x 36 to 24 x 30.  28 x 36 to 30 x 34.  29 x 36 to 30 x 54.  30 x 36 to 30 x 54.	Rs#.	of 50 f. 7, 1882. 2d. 8 9.25 10.75 13.75 14.75 16.00 17.28 19.25 21.00	\$ 9.00 10.25 12.50 14.00 14.50 18.00 19.75 21.50	40h.
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Waste, No. 2 White Machine Maste, No. 1 Colored. Waste, No. 1 Colored. Waste, Ne. 2 Colored. Waste, Washed Machine.  Prices current; New list, J.  Single SIZES. 6 x 8 to 10 x 15.  11 x 14 to 16 x 24.  18 x 2 to 20 x 30.  20 x 26 to 24 x 30.  20 x 26 to 24 x 30.  20 x 26 to 26 x 44.  26 x 46 to 30 x 50.  30 x 50 to 34 x 56.  30 x 50 to 36 x 56.  50 x 50 to 36 x 56.  Double	Ras.  mer box muary 1  Thick.  \$10.00  14.75  10.50  18.75  20.50  22.75  24.00  25.25  28.40  Thick.  18t.	of 50 f. 7, 1882. 2d. 8 9.25 10,75 13,75 14,75 16,00 17,35 19,25 21,00 22,00 23,75 20,00	3d. \$ 9,00 10,25 12,50 13,00 14,50 16,50 18,00 19,75 21,50 23,75 3d.	46h. 8 8.5 9.5 11.5

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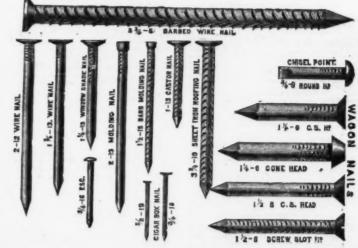
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Ring Bush Hooks, Ax Eye Bush Hooks, Socket Bush Hooks, Watt's Ship Carpenters' Tools, Carpenters' Drawing Knives, Coopers' and Turpentine Tools, LE BY FOR SALE BY

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MARTIN DOSCHER, Agent, 85 Chambers Street, N. Y.



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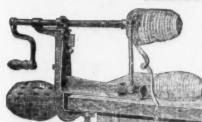


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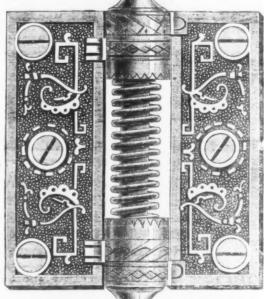
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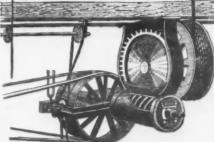
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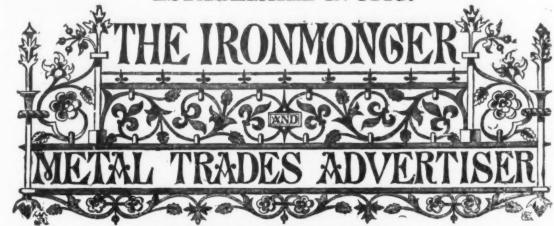
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PEBRUARY 25, MARCH 22, MAY 20, JUNE 17, JULY 8, AUGUST 5, SEPTEMBER 2 and 30, OCTOBER 28, NOVEMBER 25, DECEMBER 23, 1882, and JANUARY 20, 1883. This Supplement is published in

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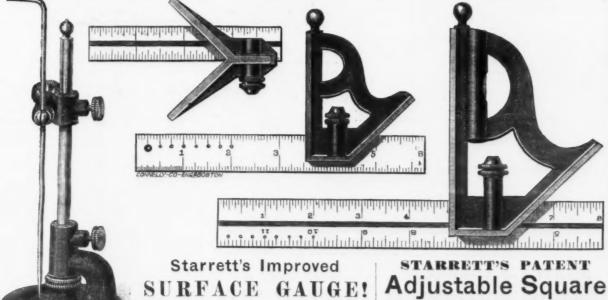
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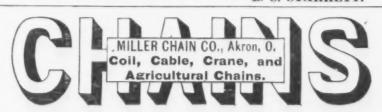
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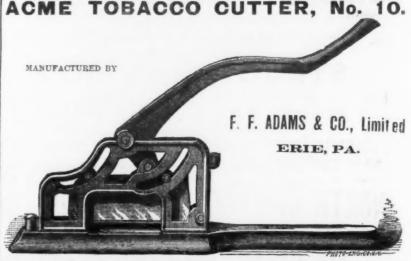
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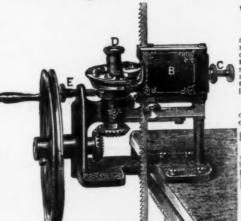
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,	Serews.   dis 30 \$\frac{1}{2}\$   Flat Head Iron.   dis 30 \$\frac{1}{2}\$   Cis 30 \$\frac{1}{2}\$   Cis 30 \$\frac{1}{2}\$   Cis 30 \$\frac{1}{2}\$   Round Head Brass   dis 20 \$\frac{1}{2}\$   Cis 30 \$\frac{1}{2}	96 5-34 5-34
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×	Wringers. Peerless No. 21/2.	FP
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NAN	PITTSBURGH. Merchant Iron.	F
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MMM	burgh Trade Report.  The following are card rates.	SI
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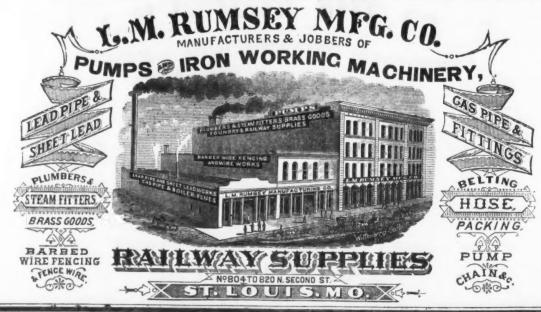




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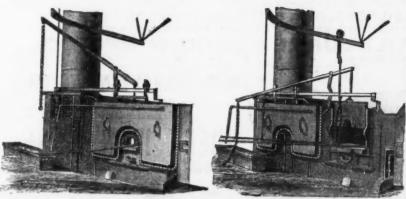
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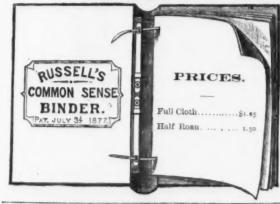
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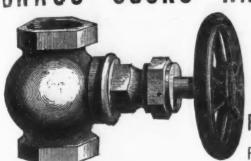
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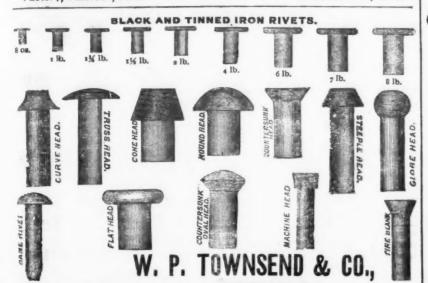


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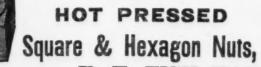
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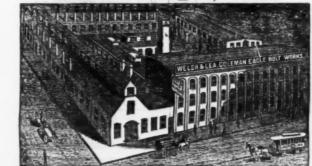
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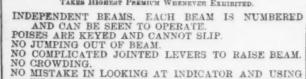


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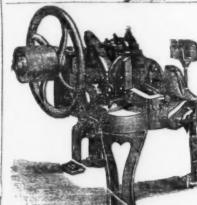
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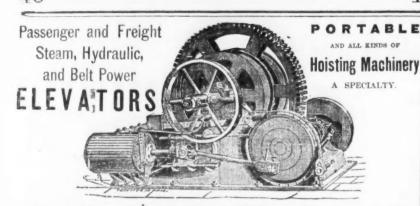
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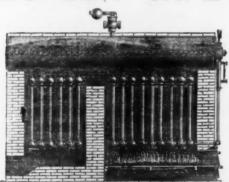
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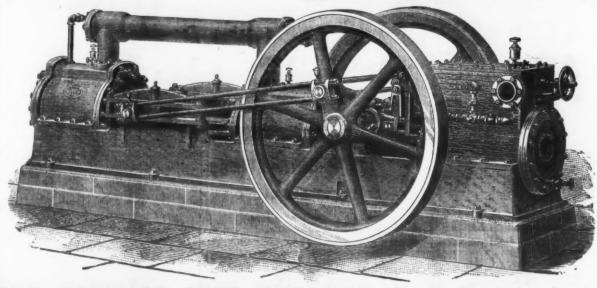
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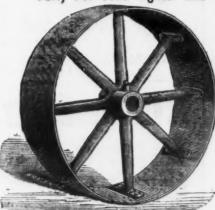
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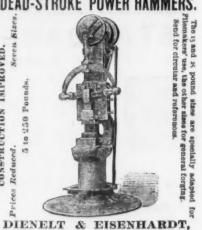
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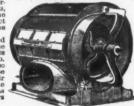


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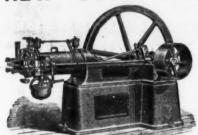
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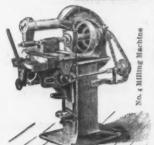
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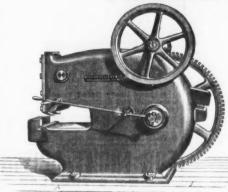
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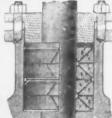
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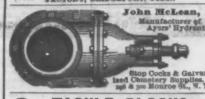
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